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C^3 INTEROPERABILITY STANDARDS
INDUSTRIAL TRENDS
INTERESTS AND TENSIONS IN NORTHEAST ASIA
INTEROPERABILITY IN A EUROPEAN ENVIRONMENT
NATO AIRBORNE EARLY WARNING OPERATIONAL FORCE OVERVIEW
NEED FOR A COALITION STRATEGY AND POSTURE
POLITICAL AND MILITARY REQUIREMENTS FOR DEFENSE IN THE CENTRAL AREA
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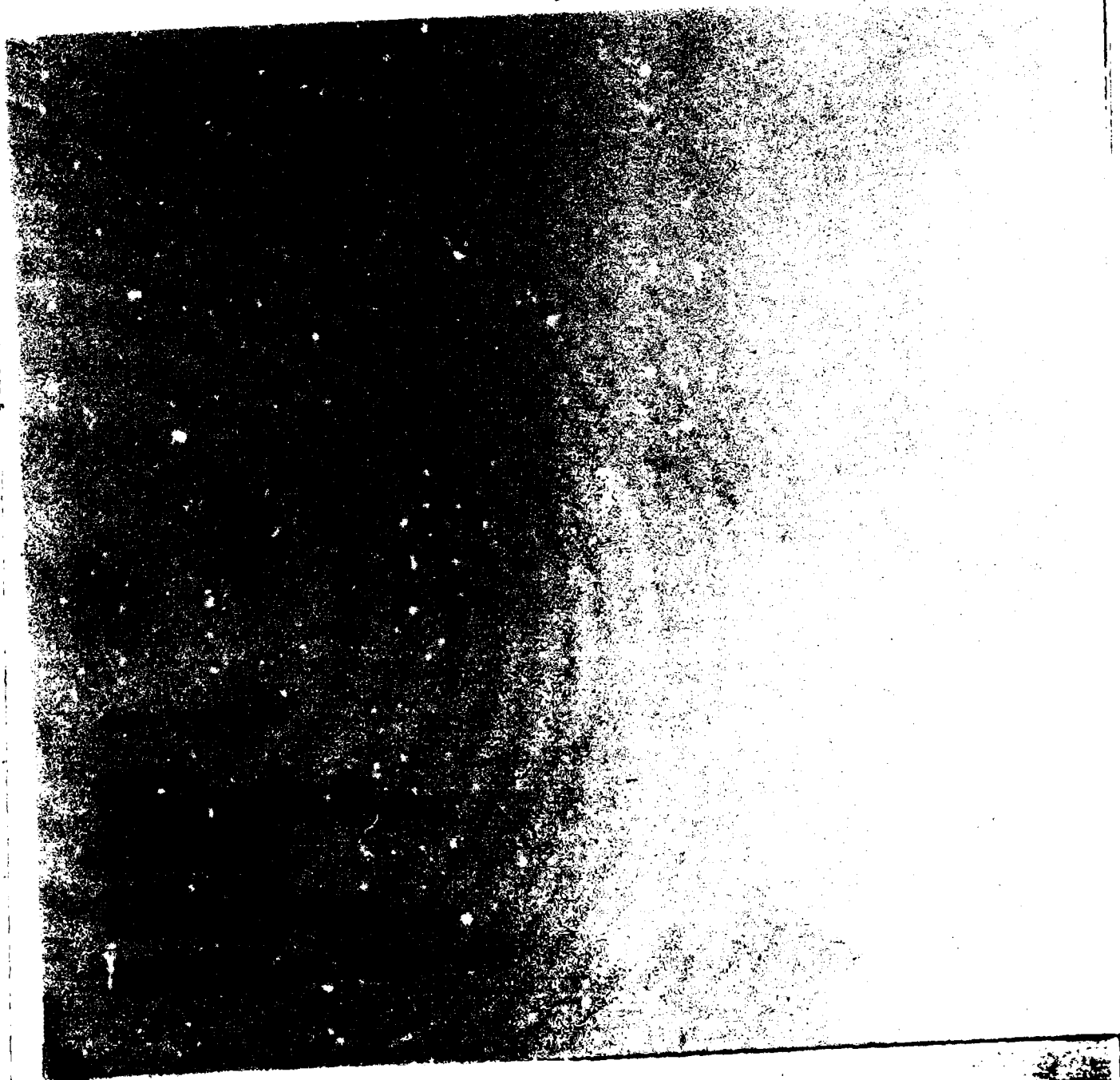PROGRESS AND PROBLEMS IN PACIFIC AIR OPERATIONS
PROSPECTS FOR COALITION DEFENSE OF THE CENTRAL AREA
ROLE AND LIMITS OF TECHNOLOGY
SOME IMPLICATIONS OF EAST ASIA THREAT PERCEPTIONS ON A COALITION STRATEGY AND C^3I

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Coalition Defense and C³I

NATIONAL SECURITY ISSUES SYMPOSIUM 1983,

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Foreword

This year marked the third in the National Security Issues Symposium series. We explored the subject of coalition defense and its many facets — military, economic, political, and cultural — and looked at the problems involved in making coalitions work. What coalitions should we seek to form? How should we improve our existing coalition defenses? What issues are involved in command, control, communications, and intelligence on a multinational scale? We also attempted to predict coalition effectiveness in light of political and technological developments.
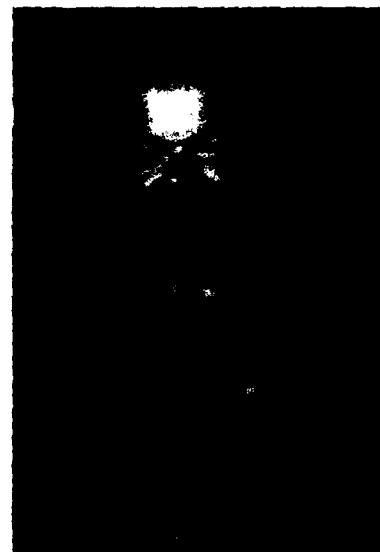
Gen. Richard Lawson, our keynote speaker, underscored some truths about NATO and the meaning of such an alliance in the Free World. The opening panelists then laid out the discussion's worldwide scope. Advocates of the maritime strategy argued for attention to the Middle East. We heard demands for coalition thinking, and a plea for support from a staunch yet politically uneasy ally, West Germany.

A succession of speakers then discussed what interoperability means in the context of the alliance's airborne early warning and control systems, how acquisition challenges are met among allied nations, and how national and multinational forces work together. We also heard about France's unique place in the European defense community.

We turned next to the largest theater: the Pacific basin and the critical Asian rim. Our speakers described how its special geographic, military, and political features affect any coalition strategy. We discussed the newly created U.S. Central Command and its mission at Asia's southwestern extremity, with long lines of supply, lack of nearby bases, and lack of support agreements with local countries. The discussion progressed to air operations over the Pacific, and we explored the common ground for technologists' ideas and the needs of those who must use the systems they develop.

Looking toward the future, we were given a forecast of the supercomputers of the 1990s and we examined industry potential in the decade ahead. We also looked at the present administration's policy on technology flow. Speakers outlined the issues NATO must face as it seeks to reconcile its members' interests, and explored the fundamental requirements of C^3I: to keep our options open and to prevent conventional local or regional conflicts from becoming global or nuclear.

Special thanks to our banquet speaker, Representative Dan Daniel of Virginia, and to luncheon speaker Norman R. Augustine, for adding focus to deliberations which significantly advanced the understanding of C^3I as it relates to strategy and tactics in coalition defense.

James W. Stansberry

Lt. Gen. James W. Stansberry
Commander,
Electronic Systems Division

Contents

Opening Remarks

Welcome to the National Security Issues Symposium for 1983, and welcome to The MITRE Corporation.

At last year's symposium we discussed deployment of tactical forces and the C³I implications. As I said then, tactical, compared to strategic, C³I presents very difficult organizational and managerial problems. I don't mean to denigrate strategic problems; they are very difficult and complex in themselves. But it seems to me that tactical operations are much more complex. They are on-going, and they are two-sided. It's like playing chess compared to matching quarters.

Implementing and integrating C³I systems into operational environments is very difficult, even for a single homogeneous service within a single country. But it's made even more complex when you have several services. If we add to that the complexity of dealing with other nations, which have differing political, economic, cultural, and military structures, we have compounded the complexity. Addressing these factors is the subject of this symposium.

On the positive side, these difficulties are being recognized. The NATO nations are facing the problems of interoperating and integrating multinational forces. There are major programs to develop common standards and systems, such as the NATO Integrated Communications System (NICS). More recently AWACS has been adopted by NATO and other nations, not only as an additional capability, but as a mechanism for integration. Similarly, in the Pacific there are a number of joint coordinated activities with Korea and Japan.

But these accomplishments reflect only a small part of the interoperation problem at all levels, from communication interfaces and software standards up through system controls and common activities. Much has been done, but much remains to do. If all the components were on hand we could face the integration and interoperation problem more easily, but there are still a lot of detailed problems in the C³I elements. Survivability is one of the greatest problems we face and needs a great deal of work. In addition to physical survivability through mobility and redundancy, we must have survivability in the face of jamming, exploitation, and other threats.

We have to build a C³I system that works under all circumstances and with all allies, that functions in the face of enemy attack and keeps on

President of the MITRE Corporation since 1969, Mr. Everett has also served as Vice President of Technical Operations and as Technical Director. He serves on numerous boards, committees, and advisory groups in the areas of science and defense.

Robert R. Everett

President and Chief Executive Officer, The MITRE Corporation

working. We must do this to achieve a more credible deterrent to conventional war. This symposium is an opportunity for interested and involved people to be exposed to many aspects of this most significant area. Hopefully it will produce increased attention and progress.

All this must be achieved, of course, against a background of advancing technology. Despite the problems I mentioned, there are many opportunities that stem from the rapidly advancing arts of digital processing. A lot is being done, for instance, to improve sensors, computers, and networking. Computers get better — more capacious and smaller — all the time. Software, and our knowledge of how to use it, is going forward.

There's a lot of talk about "intelligent" or "expert" systems. These will be very useful, but we shouldn't expect too much too soon. I'm always troubled by the phrase "intelligent systems." The systems we have really aren't very intelligent. For instance, to call bombs "smart" is misleading, I think. That's like calling a turtle a smart rock. So let's not confuse ourselves. Really intelligent systems are coming, but it is not a lack of computer capacity that prevents us from getting there — it is a lack of knowledge of how to build them. And that's going to take a long time, with many problems along the way. We mustn't forget that C³I systems, military and civilian, are primarily people, and people have their own time constants. We have to take those into account when we design such systems. They may in fact be the limiting factors in what we can do.

Our enemies have the advantage of commonality and interoperability, because they have essentially one system and they force it on their allied nations. *But we have, I think, a greater advantage: the nations that are allied in the West are willing allies.* Given a choice between willing people with a lot of differing ideas and interoperability problems, against unwilling allies and authority to enforce standards, I'll take our problems any day.

I join my partner and friend, Bob Everett, in welcoming you to the third ESD-MITRE National Security Issues Symposium.

You may ask what these symposiums have been worth. In my view they have given tremendous impetus to important causes. In October 1981 we talked about strategic issues. Whether through serendipity or cause and effect, in that same month the President of the United States called for a significant upgrade of our strategic C^3. The issues we wrestled with on this platform had tremendous impact on the decisions made in the last couple of years to improve our ability to survive and endure in a protracted conflict of strategic proportions. Your thoughts and ideas have shaped what's happened nationally and certainly at ESD, where we have embarked on a program to upgrade all our warning sensors: PAVE PAWS, BMEWS, and the DEW Line, to name a few. We made great progress on a program to improve communication for CINCSAC. We have improved our ability to portray to our leaders what's really going on, giving them greater capability to react, survive, endure, and, if need be, win.

Last year we took on tactical C^3 — what I like to call "war-making C^3I,"

the ability to fight and fight together. While tactical needs and requirements are not as well recognized as those in the strategic area, we're making real progress. Joint STARS, an AWACS for ground targets to spot second-echelon armor, is coming. And we are learning what "joint" means. In this room you can see an Army colonel and Air Force colonel sitting together. One is a program director and the other is a deputy program director. We are really learning to pull together.

So these meetings are a bellwether of things to come, things we believe in. We must understand, there's no going it alone. There is only one significant military threat to our ability to survive and endure, and that's the Soviet Union. As Benjamin Franklin said at the signing of the Declaration of Independence, "We must all hang together, or assuredly we shall all hang separately."

General Stansberry assumed his present duties in 1981. His experience since 1974 includes Deputy Chief of Staff for contracting and manufacturing for Air Force Systems Command, and deputy to the Deputy Assistant Secretary of Defense for Installations and Logistics.

Lieutenant General
James W. Stansberry, USAF

Commander, Electronic Systems Division, Air Force Systems Command

Keynote Address

The 16 NATO nations are chartered to promote peace and security in the North Atlantic. The SHAPE commander, who is responsible for military support to NATO, has three defense options: direct defense, deliberate escalation, and general nuclear response. These require common force development, force goals and a common intelligence base. The U.S. dominates the Free World in intelligence acquisition; sharing is difficult, but essential. Forces must be centrally deployed with agreed support, tactics, procedures and training. There must be common understanding of information distribution, and there must be sustainability and interoperability. We haven't made as much progress as we should; but NATO has stood the test for almost 35 years. We have an agreed strategy for the international nuclear force, we have come light-years toward a *common intelligence base*, and we have approved the first major NATO commanders' communication plan. Our greatest success is the agreed SACEUR rapid reinforcement plan. To create better coalition defense, major NATO commands must be a benchmark for interaction

of NATO and other alliances. Intelligence sharing among nations is difficult but essential. Better advantage must be taken of the C³ systems of individual nations. *It is crucial that both NATO and national responsibilities be provided for.* And we must spread our magnificent technology across the entire battlefield. Today a Turkish commander has only two landlines to communicate with his forces. It is no longer the time to think United States-only; we must develop a coalition acquisition strategy, and allocate the necessary research and development nation by nation. This is our greatest need. The threat can't be overstated. The survival of the West is at stake.

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I'd like to set the stage by reading to you from the Preamble to the North Atlantic Treaty of 1949: "The nations who are signatory herein endeavor to promote stability and well-being throughout the North Atlantic area, and promise to unite their efforts for collective defense and for the preservation of peace and security."
In Article 3 the treaty reads, "The parties separately and jointly, by means of continuous and effective

General Lawson assumed his present duties in 1983. His experience since 1977 includes Chief of Staff, SHAPE; U.S. Representative to the Military Committee of NATO; and Director for Plans and Policy, Joint Chiefs of Staff.

General
Richard L. Lawson, USAF

*Deputy Commander-in-Chief,
United States European
Command*

5

self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack."

From Article 4: "The parties will also consult together whenever, in the opinion of any of them, the territorial integrity, political independence, and security of any of the parties is threatened."

And finally, the bread-and-butter article, Article 5, states, "The parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all, and consequently they agree that if such armed attack occurs, each of them ... will assist the party or parties so attacked by taking forthwith, individually and in concert with the other parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area." That's pretty precise language.

The strategy developed and approved by all 16 nations now in NATO reads as follows: "The overall concept of NATO strategy is defense based on forward defense, confronting any possible threatened or actual aggression with adequate forces. Deterrence is based on a manifest determination to act jointly and defend the NATO area against all forms of aggression, a recognizable capability of the alliance to respond effectively regardless of the level of aggression, and a flexibility which will prevent a potential aggressor from predicting with confidence NATO's specific response to aggression, leading him to conclude that an unacceptable degree

of risk would be involved regardless of the nature of the attack."

This strategic concept also emphasizes defense designed to hold Warsaw Pact attack as far forward as possible, and offers the commander three military defense options: direct defense, deliberate escalation, and general nuclear response.

Those are significant words. As a military commander, they imply to me a common intelligence base from which to determine the threat. A common force development process. An agreed procedure for reaching an understanding of what the force structure should be. Common force goals, followed by agreed support programs and central deployment of forces. Agreed concepts, tactics, procedures, for employment of forces. Agreed training programs for personnel, a common understanding of how the command and direction will be passed back and forth among the forces, a common means to translate acquired intelligence up and down the battlefield, common sustainability, and that magic word, interoperability.

Putting all that against the situation today, one has to pause and reflect where we have been and where we may be going.

We haven't made as much progress as we should have, for many reasons. The U.S. attitude toward NATO has been created by the overwhelming dominance we came out of the war with. Indeed, when the treaty was consummated, we were the only nation with any notable military or economic power.

So, in NATO's earliest organizational structures, there was a U.S. go-it-alone policy. Understanding of coalition has been slow in evolving. Leadership-versus-followership has

gone through three or four cycles, and where once the NATO nations were glad to follow the U.S., today they want greater collective deliberation. I believe we are beginning to make progress in that area.

U.S. industrial capacity is overwhelming compared to any individual NATO nation. It has been very difficult to put together a consortium of nations in any kind of competitive arrangement.

Meanwhile, U.S. economic strength has grown very fast, and one issue is apparent daily to every American and every European: how strong the dollar is. Three years ago when I arrived in Europe, about one and three quarters of a German mark or about three and a half French francs bought a dollar; today it's almost eight for the franc and two and three quarters for the German mark. These fluctuations in economic values have frightened Europeans and made significant problems for them.

In the nuclear area follower roles have been imposed on the allies. Now they are in the uneasy position of having asked for deployment of a missile system, only to find it a politically difficult situation.

Nowhere does the United States dominate the Free World as it does in acquisition of intelligence. We dominate that field so thoroughly that military commanders throughout the alliance, as a number one feature of their plans, must calculate how, when, and where the intelligence will arrive after the conflict begins.

Perhaps NATO's greatest problem is that it has stood the test. It has created 35 years of peace in an area that

hadn't enjoyed peace that long for over 300 years. A generation and a half of free Europeans do not understand that there could be anything else. Freedom is legislated to them. So they question, "Why should we have a military alliance? Why should there be an organization like this that continues to force unpleasant decisions on our political processes?" NATO's greatest danger may be its own success in having deterred conflict.

What indeed is NATO coming to? The pessimist suggests that our weapon system debates are becoming far too difficult, our political and military requirements do not jibe, our concepts do not always follow any agreed strategy of the NATO countries, our air defense approach differs marginally from those of many NATO nations, and our C^3 arrangements vary from one end of the alliance to the other.

Traveling around Europe, looking at the Fifth Corps and the 17th Air Force in an all-U.S. exercise dominated by magnificent equipment still in the development stage, we see what modern technology might mean to the battlefield. But go north to Zeeland, and watch the British and the Dutch come ashore in an amphibious exercise under the cover of the German army, and you will see the command and control mechanism close at hand: two lads in a Jeep with two systems, and each can talk the other's language. Or go to Turkey and watch the Turks come ashore in an amphibious landing, following a British Marine outfit and an American outfit that's trying to do the command and control for all three, because the only communication the

Turkish commander has from his forces, from one end of Turkey to the other, is two landlines that are above the ground and exposed. Many times that's how we communicate; that's the kind of interface that's involved.

All of us have focused our activities on the central front because that's where the American troops are — roughly 300,000 of them. Thirty days after mobilization (we hope to mobilize before the conflict) 1.6 million Americans will reach from the north of Norway to the eastern tip of Turkey, and over three-quarters of them will not have the command and control needed to protect their lives and direct their activities.

No, it is no longer the time to think United States-only for a select group of people. Our C^3I must reach from the northern tip of Norway to the eastern end of Turkey. We must be able to pass information across the whole battlefield. It does no good that the Fifth Corps has the tactical fusion of the 21st century if the corps on both flanks are still operating in the 19th. We must create the mechanisms to spread this magnificent technology of ours across the alliance. This, I think, is our greatest need.

We must develop a coalition acquisition strategy — an understanding of the requirements of Allied Command Europe, and how to define them in terms of individual nations' capabilities to meet them. Then we must allocate the research and development nation by nation; and if one nation can't do it alone, find two. We must make it happen.

Lest you feel that all is gray approaching black, let me talk about the substantial things we have done to

achieve coalition. We have an agreed strategy, and nothing has solidified it more than the current debate about the international nuclear force (INF). The individual nations have debated the INF question, the requirement to modernize and deploy in the face of the threat, and they have agreed that the current strategy is valid.

The commander's next step is to develop a common intelligence base. In the last two and a half years we have come light-years in understanding the transfer of intelligence between nations. There are concerns: basic security, technology transfer. But we have made much progress, though much more needs to be done.

We have developed and approved the first Tri-Major NATO Command (TRI-MNC); command, control, and communications plan agreed to by all the nations. It lays the foundation for at least as much of a C^3 plan as we can pay for in our programmed available resources. Its framework does reach from one end of the alliance to the other. And the plan will be reissued every year.

In December 1982, we achieved acceptance for the SACEUR Rapid Reinforcement Plan. It gives SACEUR the approval of all the nations to deploy the forces assigned to him where and when he wants them — anywhere in the alliance. That's never happened before; and the primary obstacle has been the United States. Now SACEUR tells the United States which forces come first and where they go, and they don't all go to Central Europe any more.

We have approved the general strategic and tactical concept for employment of forces once the conflict begins. It's called Forward Defense

Poland's labor-based solidarity movement was the primary source of resistance during the 19 months of martial law that began in December 1981. But the Jaruzelski government, stronger than ever, remains a powerful partner in the Warsaw Pact.

and Follow-on Force Attack. It defines how we intend to try to force that huge threat that is massing on the other side through chokepoints and into digestible bites that we can deal with at the front. It will create the foundation for the forces of Allied Command, Europe, for the next 25 years.

Finally, we are putting out the first annual SACEUR air defense plan in July 1984. Its concept is simple. In Europe we are no longer producing studies about anything. We will produce plans and stick to them, and if we find flaws we will correct them.

How can we create better coalition defense and better understanding of the future of C^3I? First, the Major NATO Commander must be the common benchmark for the interaction of NATO and national systems. This applies to our other alliances, too. We are the leader of the Free World whether we like it or not, so there is no alternative — we must accommodate the missions at the periphery.

Second, intelligence sharing among sovereign nations is difficult — but essential. For the first time in history NATO gave political guidance to SACEUR during the crisis in Poland, how SACEUR was to employ the force in response to the requirements and the situation.

Third, NATO's military C^3 system must learn to take better advantage of national C^3 capabilities — Germany's GRUNDNETZ, Norway's NORDECA, the U.K. Boxer, the U.S. DDN. There are many opportunities for sharing tactical military and civilian communications in individual nations. Within the last 18 months the military decision-makers have agreed for the

first time that those national systems can and will be used.

National capabilities range from sophisticated high-capacity systems on one end of the alliance to tin cans and string on the other end. We cannot live with that; we must find ways to correct it, even if it means holding back technological improvement to let the peripheral systems catch up. We are trying to produce communications interfaces that will work. We have said to individual nations, "Create your system, but work with us to provide the interface." If we can't talk, there is no reason for one of us to be there.

Dissimilar systems and uneven technology between nations dictate interoperability. The interoperability of the NATO AWACS is fast falling behind the U.S. Air Force AWACS and Navy Hawkeye and the UK Nimrod. The U.S. AWACS is going in one direction, but the NATO AWACS, because it belongs to all 16 nations and every effort requires the votes of all 16, can't keep up. We are adjusting Nimrod development, but we didn't consider the Hawkeye in our early interoperability activity, and it is rushing out in front. We have to find ways to keep that from occurring.

Both NATO and national responsibilities must be provided for. We must find a way for both to work. This is absolutely crucial.

You've heard statements about the survival of the West and about the need for great effort on behalf of coalition. I can't overstate the threat, and in my judgment it will not diminish.

Some years ago I was with the President of the United States in the Soviet Union. At the dinner for the

President and his staff that evening in the Kremlin, about 600 Soviets and about 75 Americans were present.

After the General Secretary came into the room, he escorted the President and me to meet the Soviets. He picked me because I was the only American in uniform; the Soviet side was almost all military — generals, marshals, admirals. We went down the line and he only missed two or three names — no name tags, but he called them by name and told us what they did.

When we got to the end of the line the President said that that was a most remarkable feat. He probably knew only four or five of his own top military people by name.

Brezhnev said, "Ah, but Mr. President, last summer at San Clemente you introduced me to your Congress: all the members of the House of Representatives, all of the Senate. You told me what state they came from and even what committees they sat on. And you didn't have any name tags. Don't you understand, those admirals, marshals and generals, they are my Congress."

I would submit that that Congress is still in session — in Afghanistan, in Poland, and in air defense. And those of us who have to do with the creation of defense must never forget that Congress.

Session 1   Background: Policy, Politics, Local Attitudes, and the Military

Chairman:
Dr. Paul M. Doty

Director, Center for Science and International Affairs, Kennedy School of Government, and Mallinckrodt Professor of Biochemistry, Harvard University

Dr. Doty serves on numerous boards and committees, including: Senior Fellow, Aspen Consortium for Arms Control and International Security; Chairman, Editorial Board of International Security; and member, the National Academy of Sciences Committee on International Security and Arms Control.

Political and Military Requirements for Defense in the Persian Gulf

Our two basic Middle East objectives are to preserve Israel's integrity and preserve our access to oil. We have no active program or policy for either, and before long those objectives may be jeopardized. With respect to Israel's integrity, we have barely addressed the future of the Palestinians. A negotiated settlement is needed between Israel and the Arab world outlining steps to peace. The oil issue is profoundly affected by U.S. actions in the Middle East; we must display less political insensitivity there. If the Saudis feel pressed by the radical Arabs, we could face another embargo. We need to offer the Saudis a partnership, not AWACS. The pre-positioned forces to which we are accustomed are a liability in the Arab oil countries; instead of seeking bases in the area we should rely on expeditionary forces. The initial stages of an expeditionary operation should not be done by a coalition; we need our own forces that we can control. To the degree that we must have a coalition, let us start with multinational naval forces. Allied troops could be phased in after a U.S. maritime-airlift approach to the problem had stabilized the situation. This means a tremendous restructuring of the U.S. military toward use of mobile forces, leaving the heavy equipment to be provided in Europe by European nations nearer the scene. Our 38-year preoccupation with nuclear and coalition warfare in Europe has left us unable to intervene elsewhere in the world. Look only at the fact that we fought to a draw in Korea, a loss in Vietnam and a failure with the Iranian hostage rescue — these are the only meaningful instances in which we have exercised armed force since World War II. Orienting toward a maritime expeditionary force could help us correct that.

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We have two basic objectives in the Middle East: preserving the integrity of the State of Israel, and preserving the Free World's access to Middle East oil. The United States has no meaningful policy or active program for achieving either objective. Thus we may well see those interests in jeopardy before long. If so, our political leaders will turn to the military as always and say, "What can you do for us here?"

Looking first at Israel, three problems have to be addressed: the future of the Palestinians, the future of the

Admiral Turner is a consultant on international affairs and risk-taking with Stansfield Turner Perspectives, Inc. His experience includes Director of the CIA (1977-1981); Commander-in-Chief, Allied Forces, Southern Europe (NATO); Commander, U.S. Second Fleet; and President, Naval War College.

Admiral Stansfield Turner, USN (Ret.)

Former Director of the Central Intelligence Agency

Tripoli

Beirut

Sidon

Tyre

Israel's waning initiative in Lebanon. Troops draw back from last June's positions toward the Litani river.

City of Jerusalem, and the intransigent Arabs who insist that Israel be eliminated.

A year ago President Reagan enunciated a good plan to solve the Palestinian problem. Unfortunately the administration did nothing about it, and today it is almost dead — in large part because of the accelerated pace of Israeli settlement on the West Bank. The Israelis are closing off the fundamental premise of all efforts to solve the Palestinian problem: trading land on the West Bank and Gaza for guarantees of peace from the Arabs.

The Reagan plan is also dead in large part because of United States preoccupation with the problems in Lebanon. We are getting mired down there, losing sight of our objectives: protecting Israel and access to oil. Lebanon is not critical to either of those. Israel has created a 25-mile artillery buffer zone, but the Soviets have given the SS-21, 70-mile missile to the Syrians, so the problem is simply translated into different terms. Israel's long-term security cannot depend on geography; she's too small and too vulnerable. Her security, in my opinion, depends on not having to win many more wars with the Arab world. Her military victories are leading to defeats on the diplomatic and economic fronts.

Today for the first time Israel is in retreat, pulling back from Beirut to the Litani River. Why? Because of the 500-plus deaths the Israelis have endured since June 1982, and because of the severe economic pain the fighting is causing. Israel is much stronger militarily than any combination of Arab states for the indefinite future.

The Arabs know that Israel probably cannot start another offensive war, and may even have problems internally if forced into a defensive war that has high casualties and high costs.

The Arab formula for defeating Israel is to initiate, fight, and lose more wars. They can wear the Israelis down until they want to seek some form of agreement to exist together. Can the Arabs work together to do this? I think they probably are too divided to do it as a deliberate policy; but wars between the Arabs and Israel can start in a number of ways. We are not that far from a Syrian-Israeli war today, and once one starts, there will be tremendous pressure for other Arab states to join in against Israel. In short, I doubt that Israel can live successfully only by her vast military superiority. The Arabs have much more manpower and much more money for military equipment, even if it's just chewed up in battle.

What we and the Israelis need, then, to achieve the first U.S. objective in the Middle East, is some negotiated settlement with the Arab world. We should not look for some ultimate blueprint that can be imposed on both sides soon. Israel must give up something meaningful. Mr. Begin promised that at Camp David and did not fulfill it. U.S. policy must press for a new commitment from Israel in this regard.

If Israel is pressed militarily over the next few years by the Arab world, no one thinks the United States will be called upon to bring active combat forces into play. But we must be ready to protect one small vulnerability: the sea lane of communication from the free world to Israel. It goes

past Libya. We all know how unpredictable, how anti-Israel, Mr. Khadafi is. Hit-and-run attacks on shipping headed for Israel in peace or war are possible and the United States must be prepared to provide direct combat support to the Israeli nation. The Sixth Fleet with its sea control capabilities should be perfectly capable of that, if it is not drawn down too far to meet requirements in other parts of the world. And if the fleet maintains a good intelligence base on how the threat can be bottled up or destroyed, it's certainly doable.

The second U.S. national interest in the Middle East — maintenance of the Free World's access to oil — is profoundly affected by the state of relations between the Arab World and Israel. It is also impacted by our other actions in the area — like our decision to engage the United States fleet in combat support of President Gemayel in Lebanon. We have entered that war on the side of the Christians against the Arabs, and the Arabs must see this as another expression of U.S. anti-Muslim sentiment. If they become persuaded that we are so enmeshed with the Christians and the Jews that we can never conciliate between those countries (or religions) and the Arab World, then we can expect increasing pressure by the radical Arabs on the moderate Arabs to apply the oil weapon to force the U.S. to take a better position, or else turn to the Soviet Union since they can't get help from the United States.

A radicalized Saudi Arabia, or a Saudi Arabia under pressure because it fears for its own regime's security at the hands of the radical Arabs,

Needed: a negotiated settlement with the Arab world. The beginning was made March 26, 1979 as the late President Anwar Sadat of Egypt, President Jimmy Carter, and Prime Minister Menachem Begin of Israel signed a historic accord: the Israeli-Egyptian peace treaty.

could be a major threat to United States interests in this area. We should not ignore the possibility of another oil embargo.

Another danger is that there will be more intra-Arab or intra-Muslim conflagrations. The Iran-Iraq war is going on today. Who knows what will start tomorrow, and between what two nations?

A third danger is internal instability in the Arab oil-producing nations. Iran is a near certainty for political instability when Khomeini goes. A Soviet military advance into the area, to take advantage of instability in Iran, is unlikely. Yet we are facing a change in U.S.-Soviet relationships. No prediction of the Soviet direction in the Middle East or anywhere else a few years from now can be very certain — particularly if they believe we have no will or military capability to respond, except with ICBMs, to moves in Afghanistan, Iran, or elsewhere.

What can we do under the circumstances? What should our military response and capabilities be to protect Middle East oil? First, we must pay more attention to this area. We should have been putting pressure on France months ago not to ship Etendards to destabilize the region. We should be pushing our allies to recognize their responsibilities in the Middle East; their interests in the oil supply are even greater than ours.

We should be more conscious of the impact of our own actions on the internal stability of the friendly oil-producing countries. An example is when we first declared the Carter doctrine, to establish bases in the area for the Rapid Deployment Force.

We displayed total political insensitivity in trying publicly to get these countries to accept a U.S. military presence.

When Khomeini began trying to use Islamic fundamentalism to destabilize the Saudis, Kuwaitis, and others, what was our response? The Defense Department proposed joint military maneuvers, not appreciating that the last thing these Arab countries needed in defense against Islamic fundamentalism was overt association with the great Satan, the United States.

Our sale of the AWACS to the Saudis was insensitive to the political situation in the area. We sold them something they do not need and will not be able to operate on their own for a long time. A ground-based radar would do the job more simply.

We can help countries like Saudi Arabia best if we foster a partnership with greater forthrightness. We must use our intelligence to detect in advance the kind of unrest that unseated the Shah of Iran, and be willing to share those indicators with them. We can't tell them how to cope with their internal problems; only they know their culture well enough to do that. But we should caution them if we see trends moving against a regime with whom we have relations.

We must do all this with a low profile. Unfortunately, the U.S. military is not very adept at that. It's all the more difficult because we must be prepared at the same time to move in with military force in case of an oil embargo, intra-regional wars, internal instability, or a Soviet move into the region. Resorting to military force is

not desirable in any of those circumstances, but we are facing a policy vacuum, and we are likely to find ourselves in extremis.

The problem is the region's remoteness. Our normal solution to that — establishing bases from which we can operate — is exactly the wrong way to go. It's a reflex; we're accustomed to having pre-positioned forces, lines of supply and so forth, in Europe and Korea. But bases in the Middle East would be a political liability — our very presence is destabilizing, and it is very unlikely that a host country would agree that the time has come to move against an oil embargo or internal instability. It is also unlikely that we could get a base within operational range. Massira, which we are developing today, is 1,000 miles from the head of the Persian Gulf and the oil fields of Iran, Iraq, and Kuwait. Our base in Kenya is over 2,000 miles away, and Ras Banas in Egypt, with direct flight over Saudi Arabia, is 900 miles away.

Instead we must have an expeditionary element to bring U.S. military power to bear anywhere in the area. That means a U.S. Navy-Marine Corps amphibious assault arm with air support and sea control from carriers. They would seize a forward air base for the second element of our strategy for this part of the world: heavy airlift to bring in a much lighter U.S. Army and a much lighter, less complex U.S. Air Force that can get there very rapidly.

The Marines should seize the forward air base only long enough to let the first C-5s and C-140s land and start bringing in replacement forces. Then (remember the horrible lesson

of Vietnam) it's time for the Marine Corps, the Navy, and the carriers to pull out, turn the operation over to the Air Force and the Army, and go back into a mobile intervention mode waiting for the next call.

I'm not talking about a minor expeditionary force; the Marine Corps and the Navy must seize enough of a forward air base so that we can bring in sizable numbers of divisions. Not enough to stop a Soviet overland invasion down across the Zagros Mountains and into the oil fields, but enough to position forces at Ahwaz in a blocking position. They will be sacrificial goats if the Soviets decide to take us on. The President of the United States will have a very tough choice: is he going to put forces in an untenable military position in the hope of deterrence? I think that's the best we can do for a while. The United States' vital interest is involved in the Middle East. If the Soviets got their hands on the oil flow out of the Persian Gulf it would wreck NATO and our basic security position in the world. We should be willing to take that risk.

The tougher decision for the President would be what to do if the Soviets took over Tehran politically. Should we pre-emptively take over Kurdistan? That's a tough issue. I would; most presidents probably wouldn't. Moderate force may be all that is needed to establish that the United States is standing firm and that there will be much bigger repercussions if we are challenged.

But we do not really want this to be a coalition operation. It is unlikely

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Israeli tanks arrive in Damour during the invasion of Lebanon, June 1982. "We are getting mired down there," says Adm. Turner, "and losing sight of our objectives: protecting Israel and access to oil."

17

that we could get our allies to agree that because of an embargo, a war, or a country's internal problems, we should move militarily. We can't even agree with the French today on how to handle the Iraq-Iran situation.

Nor do our allies have the airlift to get their forces in. And if we are going to use U.S. airlift I would prefer taking our own troops, which we can fully control and which we know will be capable of fighting. Instant reaction, and quick politically controlled response is going to be extremely important. Meeting those goals, particularly political control of the military action, would be almost impossible with our allied coalition.

Still, the pressure will be great to *adopt coalition operation in this kind* of situation, especially for domestic political reasons, and in time we will undoubtedly do that. When we do, I suggest we start with a multinational naval force. That would be much easier to control and operate and would interfere far less with the critical ground and air commanders' operations. We would want to phase in allied troops later, when we have stabilized the situation on the ground and in the air over the critical areas.

Let's not forget that, for lack of ability to move rapidly in an expeditionary mode, we didn't do well militarily in Korea; we came off with a draw. We lost the war in Vietnam because we were not expeditionary-minded; we were still thinking of the plains of Europe. We failed totally in the hostage rescue in Iran because we were not prepared to project power over long distances in an expeditionary mode.

Those are the areas where we have used our military power in combat since World War II. Where we are going to use it next is terribly uncertain. We must therefore have a military airlift strategy so that we are prepared to fight not only on the plains of Europe and in Korea, but anywhere we are called upon.

Coalition strategy does not necessarily conflict with a maritime-airlift strategy, and a maritime-airlift strategy for the United States need not neglect Europe. Defense of Europe is critical to the U.S., and coalition strategy is the only way to handle the problem in Europe and in Korea. There we are defending not our territory but our allies' territory in partnership with them.

But our 38-year preoccupation with nuclear warfare and with coalition warfare on the plains of Europe and in Korea has left us denuded of adequate capability to intervene in an expeditionary mode in other areas of the world. The United States military must undergo tremendous restructuring, leaving the heavy equipment and the heavy combat requirements to the Europeans and focusing more on mobile forces. Forces that are expeditionary for the Persian Gulf can be expeditionary to Europe, Korea, anywhere. But they are not going to include 60-ton tanks carried one-by-one in C-5As.

Today we focus on Southwest Asia, the Persian Gulf, and access to oil. I don't want to try to predict where we may need an intervention capability in the years ahead. Only if we orient our military toward a maritime-airlift strategy are we going to be prepared for that uncertain future.

I don't agree with the unilateralist position that the Atlantic alliance is a shambles and we can't count on it. But there are enough indicators of fundamental problems in the Atlantic alliance that the United States would be ill served by continuing to develop its military solely to fight coalition warfare on the plains of Europe. I don't want to move away from the basic NATO premise, but I also do not want to leave the United States vulnerable if the alliance does not hold together over the next several decades.

Need for a Coalition Strategy and Posture

History shows that most major conflicts — including our own four wars in this century — have been coalition wars. Because of the relative decline in U.S. power, we depend as much on our allies as they on us. Indeed, the number and wealth of our allies are our one great remaining strategic advantage. But we must spend, and spend more efficiently, via more rational burden-sharing, mission specialization and sharing R&D and technology. We must buy as well as sell armaments. And we must really integrate our combined planning. Governments must learn to think in coalition terms, must learn that it is more cost-effective. They must think of balanced collective, rather than balanced national, forces. Solving the problems of coalition defense is the only way to deal with the strategy-resource mismatch and achieve a credible defense for the 1980s and 1990s at a politically acceptable cost.

Unfortunately, the Warsaw Pact has surpassed us in its coalition preparations, getting an estimated 90 percent "additivity" from its coalition forces compared to NATO's generously estimated 60 percent.

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Most major conflicts are coalition wars — wars of one alliance versus another, not one country versus another. The Peloponnesian Wars weren't Athens versus Sparta. They were the Delian League of small city-states led by Athens versus another alliance led by Sparta that included the Thebans, Argonauts, Corinthians and other city-states. The great wars in which everybody tried to drag down Louis XIV of France were all coalition wars. The French Revolution and Napoleonic wars were coalition wars. When Napoleon was asked, "Which of your opponents would you most like to fight against?" he answered, "A coalition."

Even the United States, in all four of its 20th Century wars, has fought as part of a coalition. World Wars I and II go without saying; but Korea and Vietnam involved a different kind of coalition war. More Koreans and Vietnamese than Americans were under arms, and they suffered substantially more casualties than we did. They were junior partners, but it was a coalition war.

It is amazing that, though most big wars are coalition wars, we never really seem to study the coalition approach. Not we Americans, not the Russians (fortunately), not the

Until 1981, Ambassador Komer was Under Secretary of Defense for Policy. He has also served as U.S. Ambassador to Turkey, Advisor to Secretary of Defense on NATO affairs, and as Special Assistant to President Johnson.

Ambassador Robert W. Komer

Distinguished Visiting Fellow, George Washington University; Consultant, Rand Corporation

French, not the British, not the Germans, though all of them have a great deal more experience with coalition war than we have. There's very little literature on the special problems of fighting alongside allies against an enemy coalition, very little historical treatment. Our service schools don't teach much about coalitions. When I asked the commandant at Leavenworth, "What do you teach about coalition war?", he said, "We have a one-hour course on the organization and ranks of allied armies, so we can recognize their shoulder badges when we are with them."

When I sat on the DSARC (Defense Systems Acquisition Review Council), where the services ask for DOD approval of their weapons development or production, rarely did we take into account that at least half those weapons would be deployed on allied territory, or deployed alongside allied forces, and that if we needed AWACS or NAVSTAR, the allies needed it too. Currently more U.S. Army equipment is in allied hands than in the hands of the United States Army. So in the DSARC I said, "You're not going to get my vote on anything unless the program takes our allies into account in the research, development, and acquisition process." Everybody had to produce a plan, and they did. Then we paid it no attention.

All modern nations, friend or foe, have been guilty of what Gen. David Jones calls "the sin of unilateralism." We fight an ad hoc coalition war alongside our allies and then, in peacetime, we plan and program and train as if we were going to fight the next war alone. That's as characteristic of the Germans, or the Russians until recently, as it is of the Americans.

NATO is almost unique in history in the extent of its peacetime coalition preparations. But NATO, in my estimation, has only gone about 15 or 20 percent of the way. It has a unique combined command structure, but except for air defense, it commands nothing in peacetime. However, as soon as the balloon goes up the NATO commanders are supposed to take over from the national commanders and operate full steam. That will be the day.

NATO has a plethora of joint boards, committees, and panels. Half the time nobody pays any attention to them. There are some combined programs: NADGE, NICS, NAMPSA. But the NATO AWACS is the only truly multilateral force in NATO — it is under a NATO commander, it is a mixed-manned force, and we Americans pay only 40 or 50 percent of the bill.

Note that I said NATO is almost unique. One alliance has gone further in peacetime than we have: the Warsaw Pact. There are obvious reasons why the Warsaw Pact can get standardization, interoperability, joint procurement, joint planning, and common programs. The Soviet Union runs it by fiat, whereas we are the putative leaders of a coalition of sovereign allies in which, if the Norwegians don't like the fact that we are developing a fuse for an artillery shell instead of getting it from Kongsberg, they tell us to go fly a kite.

Andy Marshall, one of the Defense Department's great students of military balances, has analyzed the "additivity" you get by adding one nation's forces to another. Adding Warsaw Pact forces to Soviet forces, he figured they got about 90 percent additivity, while NATO got only 60 percent. I suspect he really meant 25 percent. When we are behind in so many areas already, it's sad that they get a great deal more efficiency out of their coalition structure than we do.

Bureaucratic inertia is part of the problem. None of the military establishments or civilian bureaucracies have thought in coalition terms. Fortunately that is slowly changing. One of these years our European allies are going to find out our nuclear umbrella has holes in it and that continuing to rely on it so completely is a fatal flaw. Then they will start focusing on conventional forces, and they will have an incentive to do it on a coalition basis, because that's the only way you can do it without breaking the bank.

When Bill Perry and I were feeling frustrated about this in 1979, Bill said, "The big problem is industry." I told Bill I didn't think the problem was industry. Industry is interested in profits. If industry thinks governments are going to invest money in a coalition approach, it will want a share of that money. I think French, German, British, and American industry have all been more flexible than the Pentagon.

The real problem is how to get a coalition approach out of the Pentagon. To get governments to focus on this is tough. It's basically a political problem. Yelling at them isn't good enough; I tried that. You've got to make deals and tradeoffs, tell the NATO allies that if they will buy system A from us we will buy systems B and C from them. Or we will produce the equipment and give it to them free if they will man it. We have to be

much more practical at working out this sort of scheme. Changing the mindset, overcoming bureaucratic inertia, and concocting tradeoffs too good to refuse — these are practical ways of doing business.

Fear of technology leaks and third country sales can interfere with the smooth running of a coalition. If we and France make a deal to equip each other and then the French want to sell something to the Iraqis, that creates a problem, because the Iraqis very well might leak it to the Soviets. But there are ways around that problem. We had a big argument in the Pentagon over whether to allow our NATO allies to co-produce the AIM-9L heat-seeking missile. The dilemma was very straightforward: the risk of leaking an excellent weapon to the Soviets versus the advantage of having our allies equipped with it. What percentage is there in having only U.S. forces equipped with the AIM-9L, when at least half the tactical aircraft in the European scenario will belong to our allies? It makes no sense at all.

What, I asked, is really sensitive about the AIM-9L? Only the seeker. So I said, "Why don't we tell the Europeans it's in their own interest for them to co-produce everything but this last five percent, and we will sell that to them." Eventually that was the solution.

There are problems in any technology sharing. Some things we cannot and should not let our allies have — the nuclear field is obvious; there may be others. Some things the allies may not even need. But lots of people are involved in the risk-profit examination; there are lots of checks

and balances. Even if the Department of Defense gets full agreement, the Budget Bureau may object and send the President a memo before the Secretary of Defense finds out. Then if we get past the White House, we face Congress. So remember, we have multiple nodes of decision-making; all the "cons" are going to be raised.

My criticism of the current administration is that they are looking at only one side of the question: the risk of leak. But if the Soviet Union takes six years to reverse-engineer an AIM-9L, by that time we will have the AIM-9M, or AIM-9X. You have to ask how long your technology edge can be sustained.

Third country sales are a pain in the neck. But once again let's have a rule of reason. If we deny our allies trade opportunities we are not going to get them to cooperate with us. In each case you have to analyze the cost-benefit ratio, the risks versus the gains. If you say these are impossible problems to solve and establish some arbitrary policy line, you are not going to solve the problem.

We can no longer afford to neglect the coalition approach. Nuclear stalemate has made conventional forces much more important. When we ~~could rely primarily on our strategic~~ deterrent, we didn't have to face up to the problem of conventional force adequacy, and neither did our European allies because we preferred to provide the nuclear umbrella. We got cheap deterrence out of it; they got it even cheaper. And I'm afraid it has sapped their will to spend.

But now we have to rely more on conventional deterrence, not to replace nuclear deterrence but to add to

its eroded credibility. This creates a terrible bind. Conventional forces are far more expensive than nuclear ones. Even the Soviet military budget rarely went over 20 percent for nuclear. Yet democratic societies are traditionally reluctant to spend adequately on defense in peacetime. It's a historical phenomenon, this instinct of pluralistic societies to spend on everything else but their own security. If you add the recession we are now pulling out of, which the European allies are still in, it means that we cannot count on large add-ons in spending.

We tried very hard for four years to police the three-percent real-growth formula adopted by NATO. But the formula had more impact on U.S. defense spending levels than on anybody else's. Twice we had to go to the President and remind him of his pledge in order to get three-percent real growth after inflation. We even gave more than three percent added spending to the United States Navy during the Carter years.

You have distinguished and knowledgeable Europeans here. Ask them what their reaction was when the Reagan administration arrived and said, "We don't really believe in these arbitrary percentage growth goals, since none of the NATO nations are meeting them except the Norwegians." A year and a half later the United States went to NATO and insisted that the new version of the NATO ministerial guidance include the three-percent real-growth goal. If you let your allies know that you are no longer going to insist on three percent real growth in defense spending, it is pardonable if in the throes of a recession they take it less seriously.

The present administration has let all these initiatives — Long-Term Defense Program, armaments cooperation, three percent real growth — lie fallow. It picked up one thing, and we've been having problems ever since: the long-range theater nuclear forces. Are we going to provide a land-based nuclear shield over Europe, even though we don't provide the conventional force that is far more important and that goes along with it? I'm not anti-INF. But the tail is wagging the dog if that is the only NATO initiative picked up.

And how is SACEUR going to get four percent real growth when we can't even get three percent? We can't depend entirely on the traditional wasteful way, adding up defense budgets and increasing defense spending until we meet our security requirements. And the United States can't or won't provide the bulk of the air and ground strength to defend NATO or Northeast Asia. As Admiral Turner said, we now have a three-front problem. In addition to Northeast Asia and Europe, we have to defend the Free World's oil access to the Persian Gulf. Only the United States can handle this, which means we have to divert strength from NATO and the Pacific to deal with what we once depended on CENTO, or our late friend the Shah of Iran, to do.

On the coalition approach I would give the Reagan administration a very poor report card. We have put it virtually on hold, at least with respect to the Persian Gulf and the NATO initiatives.

Yet the Soviet Union cannot duplicate the coalition capability we can generate. In fact, our single greatest remaining strategic advantage over the Soviet Union is that we have the Germans, Japanese, British, French, and everybody else on our side, while they have only the unreliable Poles, Hungarians, Czechs, and a few pitiful places overseas like Cuba, Angola, and South Yemen.

So if we are unlikely to spend more for credible conventional deterrence and defense, we cannot provide it on the usual wasteful basis. We have got to spend more efficiently on a coalition basis. We need more rational burden sharing, greater specialization of missions, more R&D and technology sharing. We need more armaments cooperation — a two-way street, because Europe is not going to keep buying as much from us if we do not buy a good deal more from them.

We need more integrated and combined planning and programming, something that really doesn't exist today. The combined planning done in the NATO structure is basically adding up national plans and modifying them slightly at the margin.

We need a lot more joint logistics. We need common stockpiles. We need more host nation support from our allies, more fuel and ammunition from them. The United States cannot pursue the expeditionary force strategy called for by our geopolitical location, cannot help our allies defend themselves around the rimlands of Eurasia, unless the allies provide a great deal more host nation and logistic support to American expeditionary forces.

The coalition approach is as fundamental to Persian Gulf contingencies and to Far East and Northeast Asia contingencies, though it is less well developed there than it is in NATO. We face a very different situation in the Persian Gulf than in NATO, where we have long-standing relationships with allies, and 300,000 men already forward-deployed. Without bases, and I would add logistic cooperation and other support from several of the key Persian Gulf states, we cannot deploy in timely fashion to execute the strategy needed. It's hard enough, as Admiral Turner said, to send forces 8,500 miles to the Persian Gulf. It is doubly hard if on top of 50,000 combat forces we have to send along 50,000 logistic forces to support an air-sea line of communications running 8,500 miles. There's just no way we can do it.

Similarly, without a great deal more help from the Japanese, how are we going to defend Japan and Korea if we have to send the RDF to the Persian Gulf and at the same time help our NATO allies? Without help, we cannot execute the kind of Pacific strategy that is essential.

If you're going to send outside forces to the Persian Gulf the bulk of them are going to have to be American, because we are the only ones with the force projection capability. When Helmut Schmidt said, "There ought to be a more rational division of labor whereby the Americans take on the main job of defending our oil in the Persian Gulf, and we Europeans do more to compensate for the diversions by strengthening the defense of Europe," we in the Pentagon bought that argument. But we still await additional European initiatives to compensate for the fact that only we can defend the oil on which they depend more immediately than we.

It's easy to talk about effective coalition defense, but making it happen is a tall order. How do you equitably divide up the pie, how do you get a fair return? If the Europeans buy something from us, how do they get adequate offsets? What do we buy from them? Trade-offs, jobs, technology, profits are all involved. And policy in democratic countries is more determined by jobs, profits, and exchange rates than by national security requirements.

The biggest difficulty is getting people to think in coalition terms — getting the services to think about allied as well as U.S. requirements when they present some new mission need to the DSARC, getting governments to realize that cooperation is going to be more cost-effective than the non-cooperation we largely practice today.

We have got to start looking at what the founders of NATO meant when they said that NATO should be based on balanced collective forces rather than individually balanced national forces. That's another way of saying: stop being guilty of the sin of unilateralism.

A few of us tried this, and we found how difficult it was to move just the Pentagon, even with a favorably disposed Secretary of Defense. Multiply our difficulties in the Pentagon by 16, and that's the problem in NATO, our most important alliance. Then multiply it by the Japanese, who have carried the art of individualism to a point of refinement not reached in free societies in all history. We have already talked about the Saudis.

Still, I'm convinced that the problems of coalition defense are solvable in time, given indispensable U.S. leadership. Name me one major military initiative taken in NATO that did not come from the United States. Fortunately or unfortunately, our allies have conferred the leadership role on the U.S. and, with the possible exception of Paris, they have shown no disposition to let us turn it over to anyone else.

In sum, we have to solve our coalition problems. There is no other viable road to credible conventional deterrence and defense at a time when nuclear stalemate makes that kind of defense imperative. We Americans can't and won't do it alone. We are not going to spend 10 or 15 percent of our GNP like the Soviets do. Our society isn't built that way, and I'm glad it isn't. It is easier to design a viable coalition approach than it would be to get the United States to quadruple its defense budgets each year for the next 15 years — unless the Russians take over Canada and Mexico.

There's only one way we can resolve the strategy-resource mismatch and achieve credible deterrence in the 1980s and 1990s, at a cost that is politically acceptable to free societies: the coalition approach.

Political and Military Trends in the Federal Republic of Germany

From the beginning of the 1980s, the security policy of NATO has again become the dominant topic in the Federal Republic of Germany (FRG). Basic questions are being asked about Soviet intentions, NATO's intended response, and whether the FRG can remain a reliable NATO partner. The recent elections show that the voters do not want to be at the mercy of Soviet provocations. The new leadership is speaking plainly about decisive changes in the basic conditions for world order. The Soviet Union is now a major world power approximately balancing the United States. It is ready to intervene in world policy, not as a guardian but to enforce socialist conditions. It is not interested in contributing to the stability of the present world order; it wants a socialist one. It accepts the principle of equal security with the U.S., but not with Western Europe, which must be content with reduced security. If the Soviet Union can succeed in political blackmail, even without war, Western Europe will be lost to NATO, and a "Fortress America" will have to leave the field to the Soviet Union. The peace movement itself is destabilizing, ready for peace at any price. This is a challenge to the alliance and to the FRG. The Social Democrats will not support the NATO dual-track decision regarding deployment of the Pershing missiles. Our actions will be crucial in halting the Soviet drive to upset the security of Europe. If we fail, it will spell the end of the Atlantic alliance.

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The security policy of the Atlantic alliance has again become the dominating topic in the Federal Republic of Germany. In these very weeks we are experiencing the critical juncture of the political conflict over enforcement of NATO's dual-track decision regarding deployment of the Pershing missiles.

The points at issue are basically the same old questions. What does the Soviet Union intend to do with its military superiority in Europe? Will the NATO nations stand together against the Soviet threat? Will Germany remain a reliable partner of the North Atlantic alliance?

A clear majority of my countrymen voted this year to continue the Kohl government. They were fully aware of the security policy issues, so the election also established what the majority of voters of the Federal Republic of Germany do not want. They

Dr. Rühle is former Head of Social Science Research and former Head of the Research Department for Foreign and Security Policy at the Konrad Adenauer Foundation. He also served as Deputy Head of the Munich Institute for Security and International Affairs.

Dr. Hans Rühle

*Head, Planning Office,
Ministry of Defense,
West Germany*
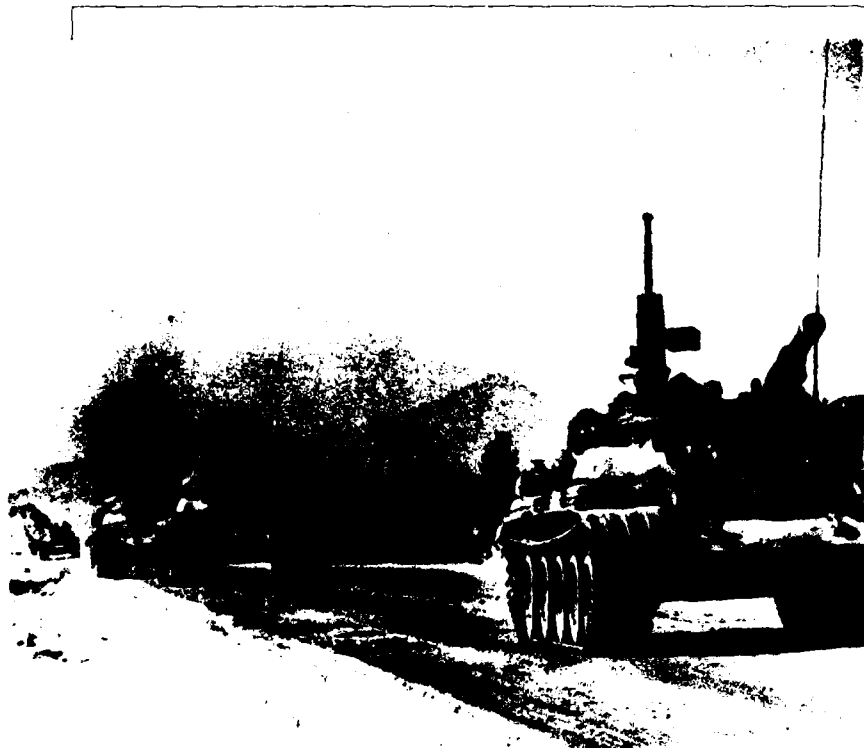
Soviet military units in Afghanistan, June 1980. Globally available military power is put at the service of extended Soviet hegemony through many means: occupation, intervention, disruption of peace efforts.

do not want an obscure, incalculable German security policy within the alliance in respect to the East. They neither want the United States at a distance, nor equal distance from both world powers. They do not want to be intimidated by the Soviet Union's unrestrained armament efforts against Western Europe and against western security interests, heedless of detente and arms control efforts.

For a long time the word "threat" was rarely heard; German government politicians avoided it so as not to disturb detente in Europe. But the new government describes Soviet armament as what it is: an intolerable threat to peace in Europe and the world. Recent history has no example of a comparable shift of strategic power. Soviet armament in the past 15 years has decisively changed the basic conditions for international order.

First, the Soviet Union has developed global war power. It has nuclear preponderance over the United States and an approximate balance in the ratio of strategic nuclear forces. Thus the time has passed when the U.S. by its nuclear superiority could deter the Soviets from any use of military force. The Soviet Union obviously is satisfied with what it calls "equal security" between the two world powers. It is trying to perpetuate and cement present parity through agreements with the United States.

Second, the Soviet Union has become able to change the ratio of world forces in favor of socialism by means of its globally available military power. The Soviet navy is present on all oceans. The range of the Soviet air force has considerably increased. Strategically mobile counterforce troops are ready to intervene

in world policy developments far beyond Soviet boundaries.

Instead of giving development aid to Third-World countries, the Soviet Union sends military advisors and weapons to create revolutionary conditions and strengthen "national liberation movements." As a superpower equivalent to the United States, the Soviet Union claims a say in all matters of international policy. The intervention in African conflicts, disruption of a peaceful solution in the Near East by supporting Israel's enemies, extension of Soviet domain through occupation of Afghanistan — all suggest the same basic pattern of Soviet world power policy.

The Soviet Union is not interested in contributing to the stability of international order. It wants a different international order, a socialist peacetime order, in which there is no room for the interests and opinions of western and western-oriented countries.

Third, the Soviet Union accepts the principle of equal security in relations only with the United States, not with Western European countries. Western Europe is to be satisfied with reduced security. Moscow constantly endeavors to increase the offensive capability of its conventional forces, and to establish in Europe a Soviet monopoly in land-based medium-range systems.

The Soviet demand for security is based on exaction of insecurity for Western Europe. What matters to the Soviet leaders is not waging war but the threat of war — in short, they would use armed force as political blackmail in the conflict between East and West.

A Western Europe in which such tendencies prevail would be lost to NATO, with consequent negative implications for the United States as a world power. The U.S. would be thrown back on itself — "Fortress America" — and would have to leave the field to the Soviet Union everywhere else.

The most decisive threat to our security is not military, but intellectual. In the United States and in Western Europe political responsibility has been assumed by a young generation which differs in its basic experience from the war generation. Freedom for it is a simple matter of cost. Relationships have been calm for as long as it can remember. It can hardly see that the calm is due to the functioning of deterrence. Many young people believe that peace is endangered by deterrence itself. Some critics question military balance based on mutual deterrence and recommend for our security unilateral measures like no first use, a nuclear freeze, or denuclearized zones. A small part of the peace movement completely rejects deterrence and demands unilateral disarmament and even leaving the alliance.

The conflict between official security policy and the peace movement over the need for NATO to modernize the international nuclear force (INF) has emotionalized the security policy debate and polarized society — to an extent that hardly admits further fruitful discussion. This peace movement does not serve peace.

According to conservative estimates, the peace movement in the Federal Republic of Germany has between 1.5 and 2 million supporters including, in particular, young people

with a high school education. Only some are Social Democrats. Others are Greens, or belong to extraparliamentary opposition groups. There does exist a communist influence, which tends toward fermentation rather than taking the initiative. Important sponsors of the peace movement now include the two churches and the mass media; these exacerbate the effect on public opinion of criticism of official security policy. This new wave of protest is a complex mixture of feelings and ideas: fear of war, fear of nuclear technology and nuclear weapons, renunciation of the traditional values of the middle class and material security, decreasing ability to discriminate between the liberal constitutional state and a totalitarian social order of the Soviet type, and something that may be decisive — a distinct fear of the future caused by economic uncertainty.

The government does not believe that the peace movement can be checked by reversing the reduction in social welfare programs, high unemployment or low housing availability. The peace movement consists mainly of well-to-do young people; many surveys show that. Dealing with the peace movement by trying to solve economic problems would be the wrong way.

We believe the peace movement should not be allowed to be successful. Nothing is as successful as success and nothing is as disappointing as failure. If we postpone modernization of the INF, or do not modernize at all, that would be a big success for the peace movement, and it would be bigger than ever before.

My guess is that the peace movement is past its peak. It certainly can

"The most decisive threat to our security," says Dr. Rühle, "is not military, but intellectual." Green Party luminary Petra Kelly argues the pacifist organization's viewpoint at the Hauptbahnhof, Munich, April 1982.

still assemble two or three hundred thousand people in Germany, but I don't think they believe they can change anything. They have demonstrated, they have blockaded barracks, but nothing has changed in the German government's basic approach.

And if we continue to stand firm, I think that while the peace movement will not diminish, it will become what it was at the beginning. We always had a group — perhaps five percent — that didn't fit into any party pattern. If by mid-1984 arms modernization has begun, I think the peace movement will shrink to the old five percent.

Remember, though, that the peace movement is not one single organization but many, and we have many different "pacifisms" in our country. The movement as a whole is plainly arguing against nuclear weaponry; some leading people are even asking for better conventional defenses. But one has to be very careful in believing what they say. Getting rid of nuclear weapons is one thing but creating conventional military operations is another, since it means doubling the defense budgets of the European countries. If it comes down to getting the members of the peace movement to vote for a much higher defense budget to strengthen conventional defenses, I think you are lost. In the last analysis they are using the conventional argument just to convince people that it makes sense to get rid of nuclear weapons. You cannot deter a nuclear superpower by conventional means, but this is what they are trying to tell the German public. And it's not unpopular. Even on the conservative side some experts came

out with fancy ways to defend Western Europe against the Soviet Union, such as giving up forward defenses, or "social defense," which means: let the Soviets come in but don't collaborate; after a few days they will go home because nobody likes them. Supporting each fancy idea is at least one politician and one leading military person from outside the services. It is very difficult for us to argue against these people. In my country, more than in any other mature democracy, there is a traditional faith in military people and not in politicians. So if you have a general on your side you are in a good situation.

There are close relations between the threat and the peace movement, whose psychological and political impact on western security has not yet been adequately described to our public. The peace movement is frequently underestimated because of its naivety and unworldliness. We overestimate it if we consider it a communist-controlled movement of the Soviet peace offensive in Europe.

Nevertheless it is very dangerous. In Western Europe it has become a kind of norm for the generally perceived shift of power in favor of the Soviet Union. In every opinion poll we have done in Germany in the last five years, if you ask who is the strongest military power in the world, 50 percent answer the Soviet Union, and only 10 percent say the United States.

This perceived power shift is a result of the political-psychological effect of Soviet military power, which, by means of immoderate armaments and practices, and a diplomacy of intimidation and unilateral

fear of war, is fomenting a mentality of acquiescence and submissiveness among those responsible for forming public opinion.

The peace movement considers itself a patriotic alternative to official western security policy, but it plays the role of a collaborator adapting itself to international power trends. The peace movement's acts of public resistance to arms modernization send a message to the Soviet Union that it need not negotiate seriously in the Geneva talks — that instead it can safely employ ultimate demands and succeed in blackmailing western security policy. The movement's effect on power policy is reflected in the widespread readiness for peace at any price.

To the peace movement it appears hopeless to resist the apparently inevitable military trend that continuously increases Soviet influence in the world and weakens the Pax Americana — especially in view of the closed social system of the East. Taking a position against western arms modernization, which is designed to restore the disturbed ratio of forces, is more promising.

It is this challenge that the alliance, and in particular the Federal Republic of Germany, must now face. The Soviet Union appears to be relying more than ever on the resistance of Western Europeans to arms modernization. It seems to feel free to wait and see whether the NATO countries prove strong enough to implement their decisions on arms modernization.

The Social Democratic Party has largely abandoned support for the NATO dual-track deployment in the last couple of months. It has divided

the German population on security policy and has begun moving away from the alliance's policy. It justifies abandoning the dual-track position by ideologically repressing the threat of the excessive Soviet armament, and treats the decisive issue of balance as irrelevant. The Social Democratic Party can no longer be expected to support the NATO dual-track decision.

In the next few weeks the Federal Republic of Germany will bear the heaviest responsibility for the security of the entire western alliance. Implementation of the NATO dual-track decision will decisively depend on my nation's attitude. Only if we succeed in overcoming opposition to a legitimate NATO defense measure can the Soviet Union's power be contained, and only thus can a change be brought about in the development of political power relations in the world. Furthermore, only if we succeed in curbing Soviet striving for hegemony, and use the constitution of our strong democracy against the forces of internal self-destruction will it be possible to contain the peace movement.

If we fail to achieve this, it will spell the end of the Atlantic alliance. If we succeed, the German federal government will help the agreed security policy of the alliance to be successful.

Session 2   The NATO Alliance and Coali

Chairman:
Maj. Gen. John T. Buck,
USAF

*Vice Commander, Aeronautical
Systems Division, Air Force
Systems Command*

*General Buck assumed his present duties
in 1983. His experience since 1976 in-
cludes Deputy for AWACS, ESD; Deputy
for Control and Communications Sys-
tems, ESD; and Chief of the Special Proj-
ects Office, SHAPE.*

32

C³ Interoperability Standards

We must be more efficient than the enemy because of our numerical inferiority. This is why command and control is so crucial to the free world. Coalition warfare, once a simple parallel process, today requires a dynamic exchange of support. The C³ process must correspondingly become more dynamic, as our force capabilities and our worldwide commitments become more dynamic. The 6 percent of our defense budget we now spend on command and control will no longer be sufficient by 1990. Thus we must spend our research funds more wisely and develop more affordable systems

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Command and control is the process by which a commander directs assigned forces and accomplishes his mission. A command and control system consists of the facilities, equipment, communications procedures, and personnel essential to a commander for planning, directing, coordinating, and controlling operations.

The important thing to remember is that command and control is a process. Central to that process is the commander. The first thing a commander considers is his forces, what he has to work with. He must also know what his mission is and what is expected of him. Obviously he needs to know something about the adversary, and there are several sources for that. And he has a staff to help him accomplish these tasks.

In the old days command and control was not a very complicated process — commanders could stand on the tops of hills and shout orders to their forces. They could estimate the status of their forces and of the enemy's forces just by looking at them. Most of the process took place with the sensors and processing capabilities in the minds and bodies of the commanders.

But the fields — and the threats — of warfare have dramatically changed. Today we are in an era of warfare beyond visual range. On the basis of a command issued just moments before, weapon systems can wreak lethality many, many miles away from where the commander is located. As capabilities — and commitments — become more complicated, command and control becomes increasingly dynamic.

Another thing that's happened since the days of old is that the level of complexity has increased. Even the company commander's command

General Herres assumed his present duties in 1982. His experience since 1975 includes Commander, Eighth Air Force, Strategic Air Command; Commander, Air Force Communications Command; Director, C³, USAF Headquarters; and Assistant Chief of Staff, Communications and Computer Resources, USAF Headquarters.

Lieutenant General Robert T. Herres, USAF

Director, Command, Control, and Communications Systems, Joint Chiefs of Staff

and control role and process are getting more and more complicated. His front has broadened. His needs for complex support are expanding.

The reason for these increased needs, of course, is that we are in a position of numerical inferiority, and we will be for the foreseeable future. Because of this, our command and control process must be more effective than that of our adversary. If it isn't, we cannot prevail in war. That is why command and control is so critical to the Free World.

In the days of old the relationships between the coalition partners were more simple. When warfare was less complicated, we used parallel coalition. You take that area, I'll take this area, and with some fairly simple coordination we can execute a plan. Unfortunately, because we are outnumbered on the European front and probably will be in most other places in which we expect to engage the Soviet threat, we can't operate this way any more.

We need a truly dynamic exchange of support and services in modern coalition warfare. The infantry of one nation is as likely to get close air support from another nation and air defense artillery su::port from a third nation as it is to get that kind of support from its own forces. There are a great many problems associated with trying to blend the operational concepts of naval forces and air and land forces within our own country; the complexities of blending those operational concepts with those of other countries is, of course, an order of magnitude more difficult.

Progress, however, is being made through hard work on command

and control problems to achieve two objectives: Compatibility and interoperability.

Two groups that are working very hard to achieve interoperability are the Tri-service Group on Communications Electronics Equipment and the Allied Data Systems Interoperability Agency (ADSIA). These two committees are formulating agreements regarding the form, scope, and content of information to be exchanged. Formalized agreements on interoperability standards, as you all know, we call STANAGs. The groups work on as many as 50 STANAGs at a time.

The interoperability problems ADSIA works on deal primarily with software. Of the STANAGs that the ADSIA is formulating, about 12 have been ratified and about eight have been implemented. And there is now a considerable amount of interoperability among data systems in the alliance in Europe.

Interoperability is becoming increasingly expensive. By the 1990s, we are going to be paying a lot more for interoperability than we are today. By then we are either going to have more complicated command and control systems than we have today, or we are going to be more disadvantaged than we are today. One of those two things will happen.

One of the reasons for higher costs is that interoperability requires continual compromises. Sometimes this means throwing away good Research, Development, Test & Evaluation (RDT&E) money that has been spent in already approved operational concepts. This is one reason there are a lot of good honest differences between the Air Force and the Navy. I

know it's a popular view that the Air Force and the Navy have a hard time getting along with one another for parochial reasons. But the missions are different and the budgets are constrained. To make its forces as effective as possible within its budget, each service tailors its forces to its operational concepts. Equipment that has been optimized to support one set of missions almost by definition can be expected to be sub-optimal when applied to another mission. But tradeoffs must be made to achieve interoperability.

A classic example of a conflict associated with coalition warfare, and of a difference of opinion between the services, is the JTIDS problem. The JTIDS problem spills over into NATO, and all of the concerns that I have talked about manifest themselves in one form or another in the JTIDS problem.

Another obstacle to interoperability from the viewpoint of the United States is that coalition warfare is a problem that we may have to deal with anywhere in the world. We have forces here in the United States that could just as easily deploy tomorrow to Korea or to Southwest Asia as to Central Europe or the Mediterranean. We can find solutions to interoperability problems in NATO at the expense of interoperability in other places, and this is something we and our allies must not allow to happen.

Economic obstacles are the most serious. Sophisticated technical solutions to interoperability problems are to no avail if we and our allies can't afford to buy the systems. We can build all the JTIDS Class 2 terminals in the world. We can build all the

jam-resistant radios that we can imagine. But if we and our allies can't afford to put them in our airplanes, we are not going to have interoperability.

In the last 10 years we have spent too much money developing command and control systems that have never gone into production. The ratio between RDT&E and production in this business is very difficult for me to accept.

However, there are some affordable interoperable systems. Have Quick, for example, the jam-resistant secure radio, is affordable and it works. There are some who argue about whether or not it's going to meet the threat. But our allies can afford it and we are going to use it. It's certainly better than continually developing something we can't afford to buy.

I challenge the best minds here to work toward interoperability solutions that we can all afford. Don't forget General Lawson's remarks this *morning:* We have got to find a way to even out the sophistication at one end of the alliance and the tin cans and string at the other end. If we don't, we won't have interoperability.

C³ Acquisition Problems

The NATO Early Warning and Control Program Management Agency (NAPMA) is the first dedicated NATO international management agency in charge of setting up an integrated multinational system. The system consists not just of aircraft, but also the ground environment, operating bases, logistics support, personnel, and training. The multinational system brings industrial benefits to the nations involved, such as the sale of national products, supplies and services, as well as workforce employment. Although NAPMA was planned as a temporary unit that would gradually turn its management functions over to other arms of NATO, a dedicated NATO management team will be required on an ongoing basis and should be considered now.

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Most NATO programs are managed by individual nations with funds provided by the participating nations through either NATO or the military budget committee.

Historically, there have not been any centrally managed systems for NATO program acquisitions. There have been some joint programs, such

as the procurements of the F-16, Hawk, and F-104 programs, but the hardware has been purchased for national inventories, an important distinction.

The NATO Air Defense Ground Environment (NADGE) system, a so-called NATO-wide system acquisition, was in fact a decentralized program. A NATO project office was created, but the U.S. prime contractor had to negotiate separate contracts with each of the host nations for the work to be performed in that particular nation.

The NATO Airborne Early Warning and Control Program Management Agency (NAPMA) is the first totally integrated system program management office within NATO. Its 13 participating nations contribute separate funds to the program in accordance with an agreed upon pay schedule — the agreement is essentially a multi-year procurement based on multi-year financing. The 13 nations also support the program with manpower.

Because this will be the first integrated NATO multinational system, I have chosen to use this program as a vehicle to discuss some of our management challenges in NATO.

Let me give you some background on NAPMA. In the early 1970s the

General Bell was formerly Deputy for Communications and Information Systems, ESD, and Deputy for the KC-10 (advanced cargo/tanker aircraft), Joint System Program Office, Air Force Acquisition Logistics Division.

Brigadier General Kenneth H. Bell, USAF

Deputy General Manager, NATO Airborne Early Warning and Control Program Management Agency

37

NATO nations recognized an evolving low altitude aircraft threat and banded together to try to do something about it. Throughout the decade, the council studied the question over and over again, but kept rejecting various solutions. Progress was slow and international consensus was difficult, to say the least.

In December, 1978, after several proposals had been made and rejected, the NATO council approved the NATO Airborne Early Warning Center (NAEWC) program as we know it today. At that time a multilateral memorandum of understanding was signed by the 13 participating nations.

Shortly thereafter, NATO and the U.S. government signed an acquisition agreement wherein the U.S. Air Force acts as agent for NATO for the purchase and delivery of E-3 aircraft. Finally, in order to reduce costs, the U.S. and NATO agreed on a standard configuration for the USAF and NATO E-3 aircraft.

I want to emphasize that the objective of the NATO AWACS program is to provide an integrated operational system, including the aircraft, ground environment, and all the facilities needed to carry out the mission. That system consists of 18 airplanes, 41 ground sites, one main operating base, four forward bases or locations for the airplanes, and the necessary logistics infrastructure, personnel, and training. *That's the system, and it requires a system perspective.*

The parent organization within which the acquisition is managed is the NATO Airborne Early Warning

Program Management Organization (NAPMO). The Board of Directors answers through the Secretary General to the North Atlantic Council. The Board of Directors is the policy making board of the organization and is currently chaired by the U.S. Each nation has a member on the board and each nation has veto power, so the board must reach a consensus to make a policy decision.

The Board of Directors is supported in an advisory role by three separate committees, each with full national representation. These committees work on problems specific to their areas of expertise. The third major portion of the organization is the integrated system management agency *itself, which has the authority and re-*sponsibility for program decision-making based on the broad policy guidance of the Board of Directors.

The chain of command from NAPMO is to the North Atlantic Council through the Secretary General. In addition, NAPMO has a direct line to the Secretary General for administrative purposes.

Essentially, national representation is proportional to the contributions of each nation, so the U.S. and Germany, and to a lesser extent, Canada, have the most members.

The U.S. and Canadian positions are occupied by military personnel on active duty. The personnel from other nations are on leave of absence from their military positions and serve in NATO civilian posts in the agency.

We are located just to the west of Geilenkirchen, which is the main operating base for the E-3A. Vissel-hoevede in the north of Germany and Skyrdstrup in the center of the

Danish peninsula, the first two test sites, are up and operating now. We have one operating location in Oerland, Norway, and a forward operating base at Konya, Turkey. The two others at Preveza, Greece, and Trapani, Italy, will come on line next year.

Our financial baseline is 1,826 million June 1977 dollars for the entire program; we don't intend to vary from it. The aircraft portion is running significantly under budget. The ground portion is running on or slightly over, and the rest is holding right on the line. Our operating and support budget goal is just under a hundred million June '77 dollars per year. The initial years have of course been higher due to start-up costs. This year's budget is about 117 million June '77 dollars, or close to $200 million 1983 dollars.

Boeing, which produces the E-3A, as you know, has declared a budget underrun on the R&D, and we expect an underrun on the production contract as well. Nine aircraft have been delivered. We will deliver all the airplanes by June 1985. Cost and schedule performance has been outstanding.

Meanwhile, we have had significant software problems on the AEGIS program, the enhancement of the 41 ground sites, which are receiving expanded computers and the JTIDS Class 1 terminal as a ground link to the E-3A.

The software and hardware work required for Phase I of the program was done at the contractor's facility, Hughes Aircraft Systems International at Fullerton, California. Phase I was finally completed just last week with the successful test, evaluation,

and provisional acceptance of the newly developed AEGIS system at two sites. Phase II is under way and includes four sites, in Norway, Italy, Greece, and Turkey. The main production effort, Phase III, covers the completion of the remaining 35 ground sites.

We are all aware of the return on their investment nations expect when dealing in international markets; the NATO arena is no exception. One method of return is the sale of national products, such as the sale of the Boeing aircraft to NATO.

A second method is co-production of equipment. The E-3 aircraft, for example, is produced in the U.S. and sent to Dornier in Germany for installation and test of all the mission equipment, using equipment manufactured for the most part in Europe.

Another potential for return on investment is the provision of supplies and services. When the NAPMA program first started, a good portion of our aircraft support supplies and services were provided by the United States. Currently we are changing that; we are negotiating a contract with the European prime contractor, Dornier. Numerous European subcontractors will provide maintenance in Europe.

Technology transfer and expansion of the national technology base are also very important to the participating nations. As an example of this demand within our program, one European contractor subsidized the initiation of his contract in order to obtain technology through a licensing arrangement.

Finally, nations are concerned about the maintenance and expansion

The NAPMO organization's responsibility for the alliance's early warning stretches from the northern reaches of Europe to the Mediterranean. Shown are NAPMO test sites and operating locations.

of their work force. They therefore may choose to seek contracts that have a low dollar value, but will enable them to keep their work force fully employed. Several nations have specified by dollar the return they expect to receive from a maintenance support contract, which has provided Dornier with the difficult challenge of figuring out how to meet this range of requirements.

Such questions of return on investment are discussed at almost every Board of Directors meeting in the context of balancing the industrial goals the nations expect. These are watched closely by the participating nations, including the U.S., and must be taken into consideration in all of our decision-making.

Now, let me turn to some economic and contractual considerations. As I mentioned, we are unique in that funds are contributed directly to NAPMO by nations participating in the program. Our multi-year contract, with multi-year *pre-determined* financing adds to our planning confidence, but it also raises some challenges.

We have long term deposit accounts to control surplus funds. These deposits draw interest and the combination tends to show a financial picture that is quite easily misinterpreted, but one that is very much appreciated by management.

We are obliged to abide by a host of multinational financial constraints. For example, because the nations contribute in multiple currency types, our financing is subject to exchange rate fluctuations, which have been particularly diverse in the last two or three years. Contributions from nations are due four times a year, but contributions may be held back by a nation until later in the quarter in the hope of obtaining a better exchange rate. This makes our economic planning a bit more difficult than one might expect. One of the uses for our deposit balances is to make up for these payment delays.

Multinational contracts also entail unique challenges. When a European is negotiating with an American contractor, the laws and the language of the United States pertain. The same holds true in reverse when the U.S. contracting officer does business with a European supplier.

No system works in isolation, particularly a C^3 system. Each interoperates with at least one other system and very often with many others. The NATO Airborne Warning and Control System has enormous potential for interoperability problems. NATO E-3, U.S. E-3, the AEGIS system, the Nimrod when it comes along, and other forces needing to pass data or operational information must maintain interoperability in a new and dynamic arena. This interoperability can be affected by either national or NATO requirements.

We are currently interoperable between the NATO E-3 and ground sites and the U.S. E-3 because NAPMO has full responsibility for the interface between the ground sites. However, we might eventually diverge if we don't properly watch the future and make very tough decisions now. It may be necessary for the United States to avoid making enhancements in the U.S. E-3 that could affect its NATO allies operationally or financially.

The last point I'd like to discuss — in my view, it's the most important — is the *continuing management support of the NATO AEW system*. At the outset it was planned that the program agency would be phased out. We are already in the process of transferring certain management functions to other organizations within NATO, including the force command.

Yet unlike the USAF, NATO lacks a source of dedicated systems management support for this integrated system. Who will perform the vital system support function in the future? In my opinion, a dedicated management team will continue to be required to support this system for the life of the system. We should start thinking about a coalition system management agency or office right now, before we disintegrate a very effective operating team with a wealth of experience and a successful record to date.

NATO Airborne Early Warning Operational Force Overview

The NATO Airborne Early Warning and Control System is primarily an adjunct to the existing European air defense network, rather than being a command center as the E-3A is sometimes considered. The system has operating bases in Geilenkirchen, Germany, where the NATO AWACS are based, and in Waddington, UK, the future home of the NATO Nimrods. The first production Nimrod is expected in December 1983. The NATO early warning system in combination with the NATO air defense system makes an important contribution to deterrence. By providing a real-time picture of what's going on over the border, the system eliminates the element of surprise for the adversary and makes our own decision-making easier in periods of tension.

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The NATO Airborne Early Warning (NAEW) force is a unique organization within the North Atlantic alliance and poses some complex command and control problems.

The E-3A component of the NATO AEW force is unique in being entirely NATO owned, funded, and manned.

It was originally intended that the force should consist of only one type of aircraft, of course, but NATO couldn't reach agreement on what sort of system to have before the time limit for financial commitment from the UK expired. So the UK elected to develop its own Nimrod AEW system and make that its contribution in kind to the joint NAEW force. So it is that we have ended up with two components of the force, one which will consist of 11 wholly British owned, manned, and operated Nimrods, and a bigger component that will consist of 18 E-3As owned, manned, and funded as an entirely international NATO organization — the world's first international Air Force, if you will.

I'll concentrate mainly on the E-3A force this afternoon because it's more interesting in the context of command and control.

The budget for the E-3A force is huge, as we heard, and exceeds 2,000 million dollars. The aircraft themselves cost almost a hundred million dollars each. So each of the NATO nations, the European NATO nations, could not afford on their own to make a viable force.

The programs for both the E-3A and Nimrod are progressing well on schedule. The first E-3A was delivered in the spring of last year and the final aircraft will be delivered in 1985.

Air Commodore McEwen served as Deputy Chief of Operations, Allied Forces, Central Europe; Station Commander of a tactical weapons unit; and as a squadron commander. He is an experienced operational and test pilot.

Air Commodore Norman D. McEwen, RAF

Deputy Force Commander, NATO Airborne Early Warning and Control System

41

At the moment we have eight. The first production Nimrod should be delivered this December and it's expected the force will have enough aircraft to be operational by 1985.

During the first 18 months the E-3A's mission effectiveness rate was 97 percent. That's to say we achieved satisfactorily 580 out of 600 mission sorties planned, which is quite remarkable for a new weapons system.

At Geilenkirchen we have had to build a new runway and aircraft ramps, and various runway and air field improvements have been necessary at the four forward operating locations. The idea behind these operating bases is to be able to disperse our aircraft closer to the action to reduce reaction time and vulnerability in war. We can save transit time in peace by regularly detaching aircraft to the areas where they will be doing their training.

We expect about half the flying we will do to be done from the forward operating bases and locations. There are hundreds of air fields throughout Europe that these aircraft could use, of course, but these bases have been optimized for AEW operations. Overall, therefore, we have a costly but very flexible force.

The NAEW force is principally an adjunct to the existing air defense ground radar nets in Europe, rather than being a largely self-contained command and control system. The NATO AEW is an ideal provider of airborne early warning.

A further aim of the NAEW is to plug gaps in the radar chain should a ground site be knocked out. It will also provide control of fighters and missiles when it's expedient to do so

because of jamming or because AEW can see targets that the ground can't.

There is, therefore, a need for the AEW crews to train constantly and for the NATO organizations to be highly standardized, since they must be able to fill in from Norway in the North to Turkey in the South.

AEW is a scarce resource because the area they have to cover is enormous. Thus a refined prioritization and allotment procedure is essential. The major subordinate commanders filter the requests made by their subordinate tactical elements and commanders and submit them to the major NATO commanders, whose staffs allocate priorities in light of the prevailing situation. The force command then issues tasking to the E-3A base and, via UK air defense command, to Nimrods. There are also streamlined methods for use when time is short.

Communications are key to the system. AEW bristles with aerials and radios and data link equipment, but we can never really have enough because it's vital that the picture sent by E-3As and Nimrods be relayed rapidly and securely to the defense forces poised to act.

We believe the combination of E-3A and Nimrods fitting into the complex and varied NATO air defense system will give the other side quite a problem. They will no longer be able to move forces without being detected, so the element of surprise will be denied them. And decision-making by our own commanders in periods of tension will be that much easier because they will have a real-time picture of what's going on over the border.

AEW provides an important contribution to deterrence, simply because it's there and because it works. In

war, it would increase the capability and redundancy of the European air defense forces enormously and would, I believe, justify every penny that we have spent on it and every gray hair that its command and control and communications problems have caused down the years.

The fact that these problems have been overcome is not only a tribute to the working of the NATO alliance, it also sends a strong message to the other side that the spirit of unity and cooperation within the alliance is alive and well.

Interoperability in a European Environment

France has recently established a five-year defense planning effort which in some respects is emphasizing C³I. Programs being planned include a strategic VLF communications system, modernization of the French air defense ground environment systems, and increased C³ defense systems redundancy. A new tactical C³ system for the French First Army is now in service in Eastern France and will be available to French forces in Germany in early 1984. While France maintains its independence from NATO in certain areas, it is participating in a number of NATO efforts, such as the NATO air defense committee, IFF work, and JTIDS interoperability with the United States.

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Our Congress in May of this year voted to initiate a five-year defense planning effort. One of the most important programs we are planning related to C³I is pre-procurement of an airborne early warning system. The system will have to be devoted not only to the conditions of the European theater but also to overseas problems. Unfortunately, the present world situation demonstrates the importance of those overseas theaters. There are thousands of French soldiers in Chad, in Lebanon, in Djibouti, and in other places in Africa or the Indian Ocean.

During these five years of planning, we will implement an airborne strategic VLF communications system. We will also complete the modernization and automation of our present systems such as STRIDA, the air defense ground environment system. These automation efforts will take advantage of existing French industrial developments in communications for civilian purposes.

We will also improve system redundancy to enhance survivability. We have chosen to implement a highly redundant system to provide a large overlap between the C³I system devoted on the one hand to strategic and tactical nuclear systems, and on the other hand to conventional forces. In many cases those systems are not physically separated.

In the tactical field, we will complete the implementation of the RITA system for the French First Army. It will be completely in service in early 1984 for French forces in Germany. This is the first fully automated and digitized system of such scale in service in the NATO forces.

In his present position, Mr. Conze has a key role in the relations between France and its allies. He previously served with France's Atomic Commission and Defense Department, and was associated with the Center for Atomic Studies.

Chief Engineer
Henri Conze

Deputy Director for International Cooperation, Directorate of International Affairs; Delegate General for Armaments, France

It was Charles de Gaulle's decision as President of France a quarter of a century ago that set France on its independent course with respect to NATO and the deployment of strategic and tactical nuclear forces; today France maintains carefully chosen ties with the alliance while rapidly building up its own C³I.

The first difficulty relating to C³I is obviously one of scale — the limitations of our defense budget.

The second difficulty we have is in our relationship with the alliance in the C³I area. It comes from the fact that the different functions of C³I can no longer be physically distinguished. A particular problem for us has to do with command: in peacetime our forces are under French command and are our national responsibility.

As part of the political decision made by General de Gaulle, France has a strong commitment to complete and independent control of our strategic and tactical nuclear forces. This has produced obvious problems in our relationship with NATO, but as far as I know the U.S. also has independent systems for its nuclear forces.

These problems do not mean that we have not the will to participate in improving the C³I capability of the alliance, or the enhancement of relations between my country and the NATO countries. We recognize the necessity of strengthening the alliance and of facing an increasing Soviet threat. Presidents of the French Republic have always called attention to this threat, and especially President Francois Mitterand during the last few months.

We think, and we have proven in the past, that a solution exists that will allow us to make independent decisions and yet reinforce the Free World posture.

The evidence of our will to reinforce the NATO C³I posture is obvious, but I would like to mention some examples. The first is that despite some early reluctance from some of our allies we are now fully participating in new efforts to that end under the umbrella of the NATO air defense committee.

Another example is the IFF problem. Some years ago the French position was to develop domestic concepts and systems. Three years ago we decided to join the NATO efforts to solve these crucial problems as soon as possible; it's a problem that we have to solve if we want to improve our defense posture. Our representatives are taking positive steps toward reaching a consensus between the different NATO nations.

We are also contributing to interoperability. For three or four years we have had a JTIDS agreement with the U.S. insuring a complete interoperability between the JTIDS program and the corresponding French program, SINTAC.

France has often been called the "naughty duck" of the alliance. In C³I, I think our STRIDA system — the air defense ground environment system — shows that France plays a very significant role. Very few in the alliance know that this system insures a very important connection, a vital one, between the northern part and the southern part of the NADGE system.

In the process of evaluating a variety of early warning systems, we have looked at the AWACS, first in July, 1982, and then again recently when our friends from the U.S. Air Force loaned us an AWACS. A lot of experimentation has been done, particularly to detect the potential difficulties of introducing the AWACS into our air defense systems. We have found that the AWACS is compatible

with the French STRIDA System. I think this is another indication that France is a significant ally.

This morning General Lawson said that the Free World relies upon C^3 technology and that the U.S. leads in that technology. While I agree, I think that to a certain extent this technology is shared by Europe. We Europeans in the alliance must also take the initiative to improve our C^3 systems and to develop new ones as necessary.

As you know, NATO is deeply involved in the analysis of new tactical concepts. The future of NATO C^3I will be considerably influenced by the perspective of the NATO countries on those different concepts. Obviously, coherence has to be obtained between these two efforts — new C^3I systems and improvement of present tactical concepts. We think it is important that the analysis of new tactical concepts take place quickly. If not, decisions might be made on the basis of outmoded C^3I capabilities.

Personally, I believe we spend too much time in Brussels discussing some "immediately" important problems, such as what forum in which to deal with those new concepts, who will be the chairman and the deputy chairman of such a working group, what will be the participation of the military bodies, what will the requirements be for coordination, and so on. We think that the task is actually to face the threat. As far as my country is concerned, we are ready to improve C^3 systems, in spite of our extra immediate preoccupations.

I would like to come back to a point that was raised this morning: technology transfer between the two sides of the Atlantic.

I must say that it is a very important problem that has caused difficulties between the European side of the alliance and the U.S. The U.S. position, and I fully understand, is to try to protect the lead that the Free World and, as part of it, the U.S. has in key technologies over the Soviets. But what is often forgotten, or not understood, is that technology is transferred not only from the U.S. to Europe, but in many cases, from Europe to the U.S.

Limiting technology transfer obliges the country or countries to develop their own capability. Today, France is producing one-third of the enriched uranium of the Free World and we have developed the ARIANE launcher. We wouldn't have been able to do that if in 1964 the Kennedy administration hadn't limited the transfer of technology to us from the U.S.

Banquet Address

Banquet Address

I believe that most members of Congress are dedicated people who try to do what is right by their constituents. Our problem is that we don't always know the consequences of our actions. We have some brilliant young people in Congress but we lack maturity and experience and that's why it's so important for all of you who are mature and do have experience to keep in touch with the people you send to Washington. You can help us to be better qualified if you give us the benefit of your experience and your judgment.

To some extent this present Congress is antimilitary. But it's not a part of the Vietnam syndrome that we had for so many years. It's the economy. Liberal members of the Congress maximize social welfare spending. "Jobs" is the name of the game, and I think it's important for those of us who believe in a strong national defense to say that we have a different antimilitarism than we had about 10 years ago.

Those of us who support an adequate national defense believe that the first social responsibility of the government is to keep its people alive and free. We base our conclusions on the capability of our adversaries and not on ' 'ir intentions. We believe

that our military budget should be based on the threat rather than on a percentage of the gross national product or a percentage of the total budget.

We face a growing threat to our security. We realize that Russia, our chief adversary, is a military power, led by a group of men whose words are without honor.

Yet our military establishment is in some respects deficient. The first respect is manpower — skilled manpower. That is not confined, of course, just to the military, but mostly to the military-industrial base. What I'm concerned most about is economic blackmail, not a shooting war. The Soviets have the largest skilled manpower pool in the world: almost 1,000,000 engineers involved in R&D activities — three times as many as do we. They are producing effective, reliable equipment. Last year the Soviets graduated 350,000 engineers. We graduated a little under 50,000 and that was a banner year. We have a challenge to re-evaluate and reorient the educational system in this country.

We can probably win the marathon but it's doubtful that we can win the dashes. As General MacArthur said, the history of the failure in war can

Congressman Daniel is a member of the House Committee on Armed Services and Chairman of the Readiness Subcommittee. He has served with the Congress for five terms.

U.S. Representative Dan Daniel

Member, 96th Congress, 5th District, Virginia

be summed up in two words: "too late." Well, it's not too late but I will suggest that the sand in the hourglass is running low. The purpose of our foreign policy as I see it is to identify and evaluate American interest in world affairs. The purpose of our defense establishment should be to enforce that interest in the event diplomacy fails. Today I'm not certain we can do that because we're not ready. We have a serious readiness problem. Readiness is the ability to shoot, move, communicate, and win. We have the world's finest fighting force, but we can't win because we're not ready. A four-star general in Western Europe recently told me, "Don't send me anymore airplanes until you send me some people to fly them. Send me people and send spare parts for our aircraft." On my return from Korea, I stopped in Hawaii and talked to the Commander of the 25th Division. He said, "If you are going to declare war, declare it in April and end it in September because I don't have any winter gear for my troops." So while we have an enormous capability on paper, we are not ready to protect American interests around the world.

The Department of Defense does not plan well. Congress does not authorize and appropriate intelligently and industry does not produce efficiently. It's my judgment that the American people are willing to spend whatever is required to meet the military need but they are not willing, nor should they be, to buy planes that won't fly, tanks that won't track, guns that won't shoot, and ships whose prices continue to escalate. Our most critical deficiency, however,

is in the area of coalition defense and C^3I. A coalition requires, above all else, a constant exchange of information between the Department of Defense, industry, and the Congress. No nation, no matter how large its inventory of weapons, can expect to prevail unless its military leaders have the capability to command, control, and communicate with their forces and have reliable intelligence on the activities of our adversaries. This message has finally gotten through. It's been given a high priority by the committees in the House concerned with military preparedness. The authorization for 1984 is 32 percent above the 1983 appropriation. With this the services are expected to reduce interservice conflict over common equipment. Interoperability between the services is necessary, as reflected in JTIDS, for example, and in the Joint STARS radar.

Over the years there have been many indicators that C^3I was in trouble. The executive branch was quick to point out the effectiveness of C^3I during the Mayaguez incident. But if I recall correctly, we lost more men in that engagement than we rescued. Close on the heels of this episode, the Soviets conducted their exercises known as Okean 1975. During this, our adversaries demonstrated their ability to control hundreds of assets over several oceans. Entire operations were coordinated with the leadership of Moscow. Following that activity, the Under Secretary of Defense for R&D said that it would be 10 years before this country could duplicate the effort carried out by the Soviets.

But that same country recently told the world that it could not maintain a viable track on two aircraft — a reconnaissance aircraft of our own and a

civilian airline 747. As a result, 269 lives were lost, including one of my colleagues in Congress. Just think how a deficient C^3I system can lower the threshold or create a nuclear war.

Throwing money at the problem is not going to solve it in its entirety. You're going to have budget restraints. All of us must try to get the best possible return on our investments.

Coalition defense in my mind makes C^3I even more important in addition to increasing the importance of the sacrifices of our soldiers, sailors, and airmen. They must have the capability to command, control, communicate, and process intelligence between services and with allies. Looking at the current world situation, this task becomes even more imperative.

I believe the American people are willing to spend money if they know that we are putting forth our best efforts. And I believe the majority of the American people believe that the "cost of peace is never as high as the cost of war."

Session 3   The Pacific/Southwest Asian Theaters and
Coalition C^{3}I

Chairman:
Admiral
Thomas B. Hayward,
USN (Ret.)

Some Implications of East Asia Threat Perceptions on a Coalition Strategy and C³I

merica is just beginning to recognize the importance of the Pacific and Indian Ocean areas. By the year 2000, almost 70 percent of the world's population will be centered there. The balance of U.S. trade dollars has already shifted from Europe to Asia. Yet it is difficult to persuade the East Coast establishment to shift its focus away from Europe long enough to appreciate the growing economic and military power in the Pacific. Coalition defense, by definition, involves more than two countries. Our relationships in Asia are between ourselves and other countries — individually — so there is no coalition defense in the Pacific and Southwest Asian theaters in realistic terms. Relations between China and the U.S. are bilateral at most, and certainly not trilateral with Japan. We have a long way to go before we get a coalition between China, Japan, and the U.S. Looking at specific countries, our relationship with Japan remains totally bilateral — while Japan does not do enough to meet its stated defense goals. Korea and Japan are a long way from a coalition relationship with the U.S. And Taiwan is a situation of growing complexity. ASEAN holds promise, but it is not now a security coalition. It is time for us to take into account all disparate bilateral arrangements to prevent building the wrong C³I architecture.

Governments perceive threats to their security in distinctly individualistic ways. Few evince real concern about the growing Soviet threat, while some tend to worry about China. Most are concerned about domestic problems, insurgencies, and succession of leadership — the continuation of government. Rearming Japan will not be well received in the Pacific for a long time to come. Ironically, while bilateration will prevail politically, the challenge confronting the military planners will be how to develop C³I systems that maximize commonality and interoperability in the best of "coalition" terms.
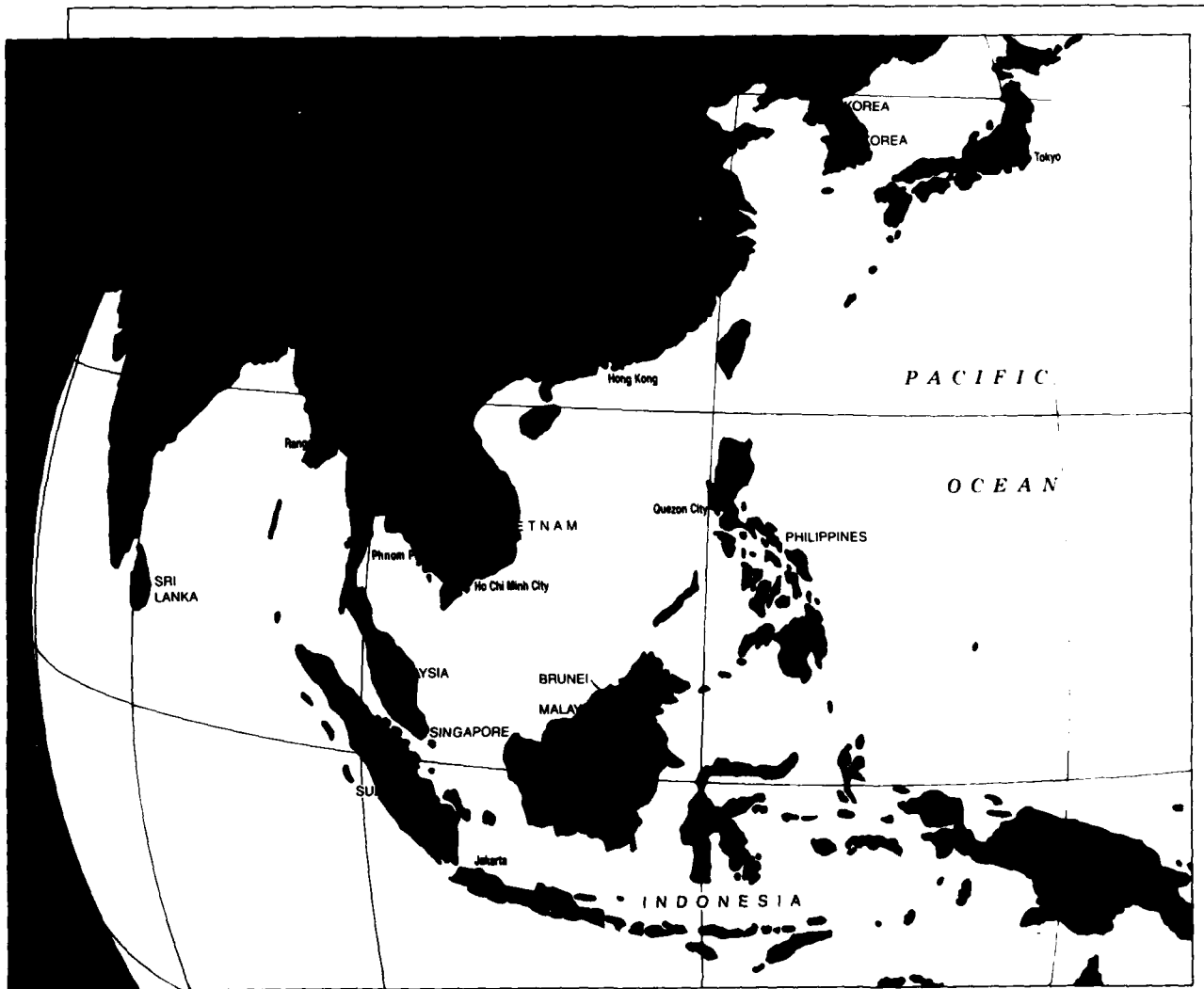
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We are here to grapple with the application of a coalition strategy, of coalition warfare, to the Pacific-Asian region, with special emphasis on its implications for C³I. My views on this subject are biased by years of duty and experience on the Pacific scene. My thoughts on coalition warfare differ dramatically when thinking Pacific vs. Atlantic.

Admiral Hayward heads a consulting firm that deals primarily with national security issues in the Pacific Basin and East Asia. He also works with the Pacific Forum, an international institution focused on the Pacific region. He serves on a number of civic advisory and corporate boards.

Admiral Thomas B. Hayward, USN (Ret.)

Former Chief of Naval Operations

KOREA

KOREA

Tokyo

PACIFIC

Hong Kong

OCEAN

VIETNAM

Quezon City

Phnom P

PHILIPPINES

SRI
LANKA

Ho Chi Minh City

YSIA

BRUNEI

MALA

SINGAPORE

SU

Jakarta

INDONESIA

*East Asia — growing in world
importance.*

In Europe, one cannot deny the appropriateness of coalition thinking to the military situation. One can question, however, the degree to which a coalition strategy should be stressed. We have placed heavy emphasis on NATO — in some sense to a fault — which is one of the reasons we found ourselves in such poor shape when the Shah was overthrown in another theater. As the situation developed into crisis proportions in the Indian Ocean, each of the services found itself ill equipped to respond.

By our intense emphasis on coalition strategy planning in Europe we had built too much pre-positioning there. We had almost eliminated sealift because some were convinced that war there would be short. The Navy, for one, lost influence as a consequence, leaving it less able to determine how it would react to other worldwide crises. Airlift too proved not responsive. The net result has been that for the last two years or more we have been struggling to put together the right kind of command relationship and force structure for the Rapid Deployment Joint Task Force (RDJTF). While coalition warfare is very applicable to Europe, and I thoroughly endorse it, I implore you to think of the Indian Ocean and the Pacific in somewhat different terms.

First, let's appreciate just how important the Pacific-Asian region has become. By the year 2000, more than two-thirds of mankind will be living in East Asia. On any given day, the largest dollar value of international trade is transacted in East Asia. According to Norman McCray of the *London Economist*, there has already taken place a shift in the world's economic center of gravity from the Atlantic to the Pacific. Indeed, economic

growth rates over the last several years in the Pacific have considerably outdistanced the world's average. Dr. Paul McCracken, the distinguished University of Michigan economist, has said that by the year 2000, "The complex represented by such economies as Japan, Taiwan, South Korea, Hong Kong, Singapore, and Malaysia probably will be an aggregation of power and dynamism exceeding that of Western Europe and the United States."

The United States has fought three major wars in Asia in less than half a century; the four major powers of the world today (the United States, Soviet Union, Japan, and China) confront each other in this region and vie daily for world attention and regional balance of power influence.

America is finally beginning to realize the critical importance of the Pacific and the Indian Ocean to our global interests in terms of stability and economic and political advancement. But this recognition has come slowly. Those of us who live, study, and work the Pacific problem have frequently been discouraged by the difficulty of getting the Eastern Establishment to swing their collective heads from Europe and recognize that the Pacific is an area of significant interest to this nation.

Since my definition of a coalition requires the involvement of more than two countries, I find it cumbersome, and for the most part inaccurate, to apply coalition concepts to relationships in our area of concern, which are fundamentally bipartisan and in many respects highly disparate.

Sino-U.S. relationships, for example, are tenuous at best. It is much too early to predict whether Deng Xiao Ping's regime really represents China's long term leadership and direction. Although we are not impervious to the concerns and sensitivities of Japan in our dealings with China, Sino-U.S. relations are basically bilateral. And while consultations do take place to a degree, we certainly do not envision coalition planning leading towards a trilateral arrangement.

In Korea we continue to be at odds with our new-found Chinese friends, and that situation is not going to change. We have not even a modicum of coalition support from Japan in terms of Korean security plans. There is progress, but it is minimal. Thus, we are a long way from a coalition strategy that involves Japan, Korea, and the United States.

It probably is true to say that only China, Japan, and the United States really believe that the Soviet Union is the major problem in the Pacific. Still, we do not have an adequate baseline from which to judge what Chinese defense requirements are, even on a bilateral basis. So we have a long way to go before we can plan on a coalition that involves Japan, the United States, and China, or develop a military hardware investment strategy built upon such an expectation, including C³I considerations.

With respect to Japan itself, the U.S.-contrived aspects of the Japanese constitution, in conjunction with the structural features of our security consultative agreements, are bilateral in every sense, and are likely to remain so long into the future. But the United States must remain especially alert to the requirement to develop as much interoperability as possible in

the C³I systems of each of these nations. If we have an issue with the Japanese, it's that they are not doing enough in their own defense. In bilateral terms the significant issue yet to be addressed forthrightly is: What can Japan do to augment the U. S. force structure in the Pacific to deter Soviet adventurism?

Concerning the Republic of China, the U.S. finds itself almost isolated in defense cooperative terms, even from our European allies. The future of our relationship with Taiwan depends heavily upon the intensity of our resolve and commitment to the Taiwan Relations Act. One could go so far as to suggest that if we are really serious about the applicability of a coalition strategy to the Pacific, then we should surely insist upon the involvement of the R.O.C. in our strategic planning vis-a-vis the Soviet Union.

The Association of Southeast Asian Nations (ASEAN) presents a different kind of opportunity. It is an economic and quasi-political coalition that holds promise in economic terms for regional stability and political maturity. But it is not a security coalition. Even if it were, it surely would not involve the United States. On the other hand, from a C³I point of view, it is a fertile ground for selective application of U.S. technology to make this political coalition a more effective organization.

What undermines effective coalition thinking and planning is that regional perspectives on imminent threats on the Far East are clearly different from the balance of power concepts that we generally use. This is true despite the fact that the four major powers exist in the Pacific and that there has been an increased focus on the Pacific

and the Asian regions caused largely by the deMaoification of China, the enormous industrial development of Japan, and stunning military growth by the Soviet Union. For instance, most nations in Asia are simply not that concerned by SS-20s being aimed at Japan or China. They don't concern themselves about Backfires or Blackjacks operating in the area, and a growing Soviet naval, air, and ground threat. Their interests lie elsewhere.

Less than two months ago I participated in a conference on Southeast Asia security. One of the leading parliamentarians from an ASEAN country made the point: The Americans fail to appreciate that our deepest concern is the ever-present potential of China in our region. We are deeply concerned by recent American obeisance to the Chinese warlords. Another ASEAN conference participant partner added "Of all the threats that concern us, the Russians are the least."

ASEAN concerns are internal — insurgencies, terrorism, economic dislocation, social problems, and the ever present problem of succession of leadership. These are the concerns that the Asian nations have; as we work with them we have to appreciate these factors.

We must remember these points as we devise schemes to improve their C³I capability: these nations are not overly concerned by the Soviet Union; they have great limitations in terms of the level of technology they can absorb. Too often, the kinds of things we devise for them are unaffordable, leaving them in a time of crisis with a system with which we cannot interface.

We must learn how to operate in this vital region of the world where

we have fought many times and where there is tremendous potential for our further involvement.

Ironically enough, while U.S. security relations in the Far East will be largely bilateral for years to come, our investment strategy for military systems must bridge the bilateral political realities and be based on interoperable, compatible C³I concepts that take on clear "coalition" images in every possible dimension.

The Pacific-Asian region is a fascinating challenge, to say the least.

Prospects for Coalition Defense of the Central Area

The mission of the U.S. Central Command is to assist friendly nations abutting the Indian Ocean and Arabian Sea when they request support. There are some unique challenges to this mission: we have no major forces in place in the theater, no alliances or support agreements with the host nations — in fact, there are no host nations.

Major obstacles exist to the formation of alliances or coalition defense: nations are separated by distances up to 3,000 miles. There are 13 major ethnic groups, 6 major languages, religious diversity, and economic disparity. Other obstacles to forming coalition defense are a traditional reluctance to pursue common interests and goals and no common feelings about what the threat is. The Gulf Cooperative Council (GCC) in the Arabian peninsula may be the first step in defense cooperation. The Council has no particular political alignment though the U.S. is ready to work with it or any member. Economic interests in the GCC have led to communications between nations, which may lead to coalition defense.

If the U.S. Central Command is called into action, it will have to take its communications capability with it.

The communications will have to interact with the communications of the host nation, which is a problem. The system will have to connect to embassies and regional governments — and provide C^3I to the U.S. forces. It will have to provide secure anti-jam voice and data and will require access to U.S. intelligence assets. The current system consists of satellite and HF links. The Command has made substantial progress. Headquartered at MacDill AFB, Fla., the unit has conducted 16 major exercises in the past three years. The most recent consisted of joint operations with Egypt, Somalia, and Sudan. It established that the Command can function for extended periods and under realistically harsh environmental conditions.

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There are many obstacles to the formation of a security alliance among the nations in the U.S. Central Command (CENTCOM) area of responsibility. Geographically, the area is divided roughly into thirds by the Persian Gulf and the Red Sea. These sub-regions are separated by vast distances. To give you some perspective: the distance from Cairo, Egypt, in the west, to Karachi, Pakistan, in the
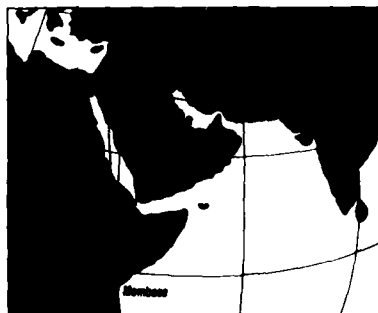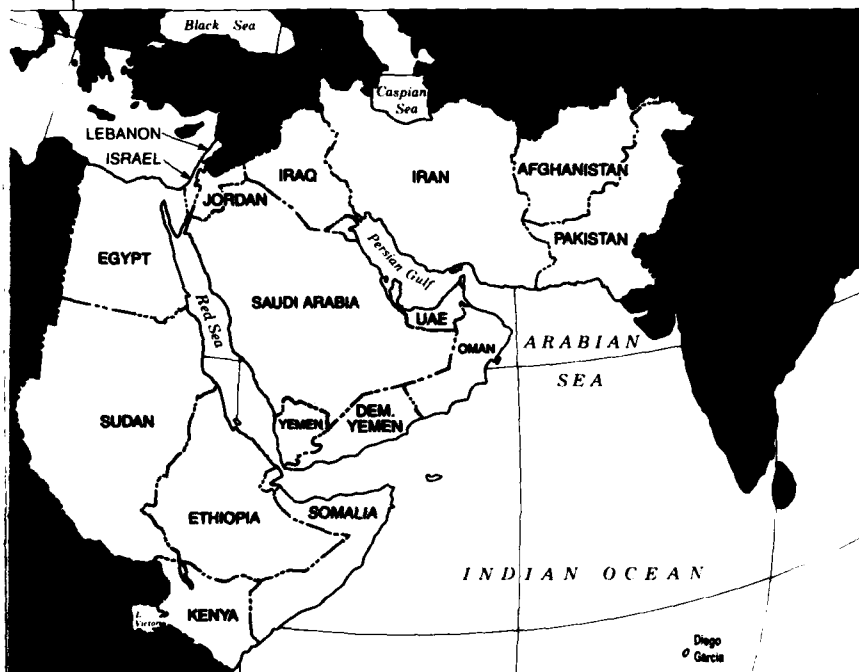

General Kingston assumed his present duties in 1983. His experience since 1977 includes Commander, Rapid Deployment Joint Task Force; Commander, 2nd Infantry Division, Korea; and Chief of Staff, United Nations Command, U.S. Forces, Korea.

Lieutenant General Robert C. Kingston, USA

Commander, United States Central Command

The U.S. Central Command's area of responsibility.

The scope of the problem: from Cairo to Karachi is roughly as wide as the United States.

east, is about 3,000 miles. From Amman, Jordan, in the north, to Mombasa, Kenya, in the south, is about 2,700 miles.

The region's mountains and wastelands limit travel and tend to prevent development of internal lines of communication. This geographic isolation has promoted cultural compartmentation. There are 13 major ethnic groups and many smaller groups of Asians and Africans.

Cultural compartmentation has resulted in simultaneous development of at least six major languages and countless minor languages within the area. For instance, in Afghanistan alone there are over 30 minor languages within a population of only 15 million. The area is distinguished by religious diversity which has produced some of the tensions that exist in the region.

In more recent times, the oil wealth of some of the countries has produced economic disparity. For example, contrast the per capita income of Qatar's 225,000 people, which is about $20,000 a year, with Ethiopia's 32 million people, with a per capita income of about $400 a year. The result of these disparities is a reluctance by the peoples and governments to pursue common interests and concerns. Furthermore, their varying perceptions of threats to their national security poses another barrier to coalition defense.

At the same time, ever since the formation of the Arab League in 1945, certain factors have created momentum toward security alliance.

Alliance systems historically have been created for three basic reasons: To provide for an increase of power,

to declare political alignment, or to provide an incentive for mutual assistance.

OPEC, the Organization of Petroleum Exporting Countries, was created in 1960 to increase the pricing power of some of the world's oil producers. By regulating the behavior of competing oil producers, OPEC insured the economic security of some of the Gulf nations.

The establishment in 1981 of the Gulf Cooperative Council (GCC) may provide an incentive toward other forms of cooperation. The Council has made some impressive progress towards joint economic acting as well as coordination in political and security fields. Khomeini's recent threats to restrict shipping in the Straits of Hormuz may well provide the additional impetus towards defense cooperation. The Council is still maturing and its future form and ability to act on behalf of the member states has not yet been defined. But in terms of prospects for coalition defense, I believe that GCC presents a good first step towards some future form of collective security among regional states.

Modern communications has played a major role in reducing the isolation and compartmentation of the peoples of the peninsula. There is good reason, then, to expect that the GCC states will consider the importance of communication in whatever form of collective security they may adopt. However, in most of the other regions there is either an obsolete or sub-standard communications system. In many of these areas I won't know who our coalition partners are until after an emergency arises.

The United States government remains deeply concerned that the Iran-Iraq war may spill over and threaten
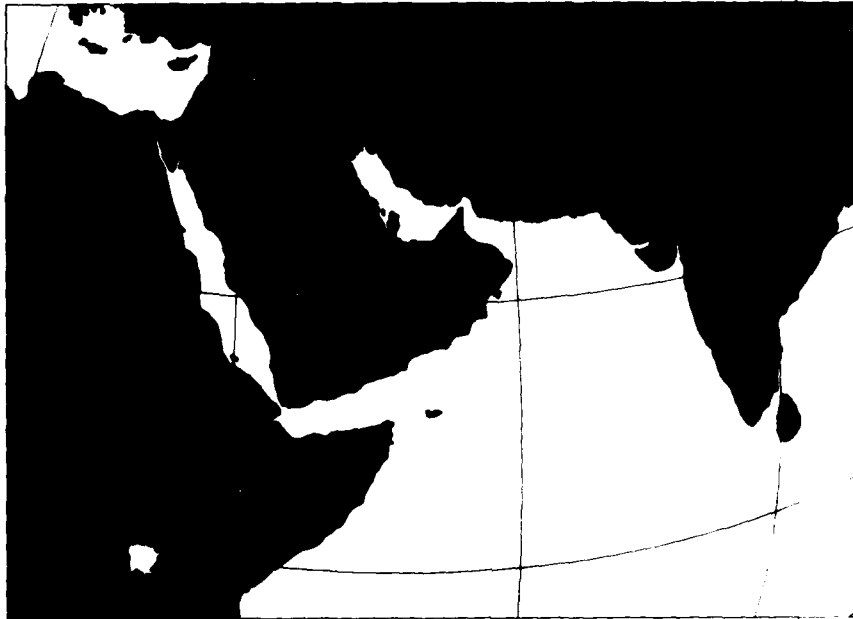
The U.S. CENTCOM area of responsibility includes 13 ethnic groups.
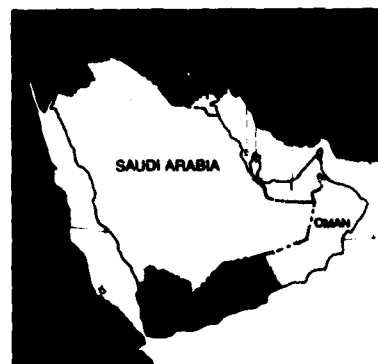
The six nations of the Gulf Cooperation Council.

the security of friendly states and the freedom of passage within the area. We are ready to cooperate across the spectrum of political, economic, and security issues with GCC members, both collectively and bilaterally, in any way that we believe will contribute to peace, progress, and stability within the region.

Given these conditions, I've had to make several important assumptions. One is that I have to take my communications with me. Another is that my C^3I may have to interconnect with the systems of the host nations requesting our assistance. Connectivity requirements vary greatly, and we will have to tailor our systems to meet each host nation's requirements.

The U.S. CENTCOM C^3I system must provide reliable, serviceable, secure, anti-jam voice and data links with the National Command Authority, the JCS, and supporting unified commands. It must also provide similar connectivity with host governments, uninvolved governments in the area, U.S. embassies, U.S. CENTCOM components, and host nation forces. I must also be able to reliably and rapidly access our national technical intelligence assets across more than 7,000 miles.

U.S. CENTCOM headquarters, located at MacDill AFB, Fla., is linked to the DCS. One or more single-channel satellite nets link CENTCOM elements to headquarters. HF links act as an alternate to in-theater communications. During deployment I maintain connectivity with a dedicated C^3 aircraft that nets with existing systems. Once deployed in the area, we build upon the existing systems, access another UHF satellite, and increase the HF connectivity.

We have conducted 16 major exercises in the last three years. Five of them have been overseas. We just concluded Bright Star 83, which was conducted during August and September in Egypt, Sudan, and Somalia. It included Army, Air Force, Marine, and Navy elements in joint and combined operation with host nation forces. As a military exercise, I think Bright Star was a success. We were able to test and refine our C^3I systems under extreme physical, climatic, and terrain conditions. I think the exercise was successful in demonstrating that the U.S. is committed to peace, progress, and stability in this region.

Interests and Tensions in Northeast Asia

The United States has a heavy investment in the Pacific area, but we typically do not pay close attention to the region unless there is a major crisis. Europe, the Persian Gulf, Central America, and nuclear weapons-arms control now supersede U.S. interest in the Pacific (understandably). A principal problem confronting us at present in East Asia is the political instability of some of our allies, such as the Philippines, which exhibits the conditions that are common to the collapse of an authoritarian government: economic downturn following an economic upswing, rapid urbanization, public concern with repression and corruption, indecisive U.S. support, and a catalytic event such as the assassination of an opposition leader. The end of the Marcos government could cause problems for the U.S., especially in terms of military bases at Clark and Subic, which happen to be the largest employers in the Philippines after the Philippine government. South Korea does not show promise for political/military coordination with Japan because of traditional animosity between them. The North Korean government is in a leadership succession crisis, which is good news for the South Koreans,

but the South has periodically exhibited signs of political instability itself. Japan is spending limited amounts on defense and is unable to defend itself against a determined Soviet attack. The country has prospects for significant change because Prime Minister Nakasone is smart, ambitious, and has a vision. He is a student of de Gaulle's nationalism. Japan has the potential to far exceed what France has done. Our C³I problems with Japan concern our willingness to trust them with military secrets and our mutual willingness to share technology. Other countries in Asia worry about whether the Japanese will stop at conventional self defense. In summary, we can expect Japan to want to appear stronger in the face of the Soviet military buildup, and we may see a more independent, French-like development in the last part of the 20th century.

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There is a major discontinuity in American strategy. Although the United States has extraordinarily important economic and military investments in East Asia, we are destined not to spend a great deal of high level policy time thinking about

Dr. Nacht teaches in the areas of international affairs and security. He has written widely on American foreign and defense policy, on worldwide security problems, on anticipating regime changes in developing countries, and on the making of national security policy.

Dr. Michael Nacht

Associate Professor of Public Policy and Associate Director, Center for Science and International Affairs, Kennedy School of Government, Harvard University

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OKINAWA

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PHILIPPINES

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Subic

MARIANA ISLANDS

👤 8,500

SEVENTH FLEET

✈ 240

🚢 60

👤 32K

👤 MEN ✈ COMBAT AIRCRAFT 🚢 SHIPS
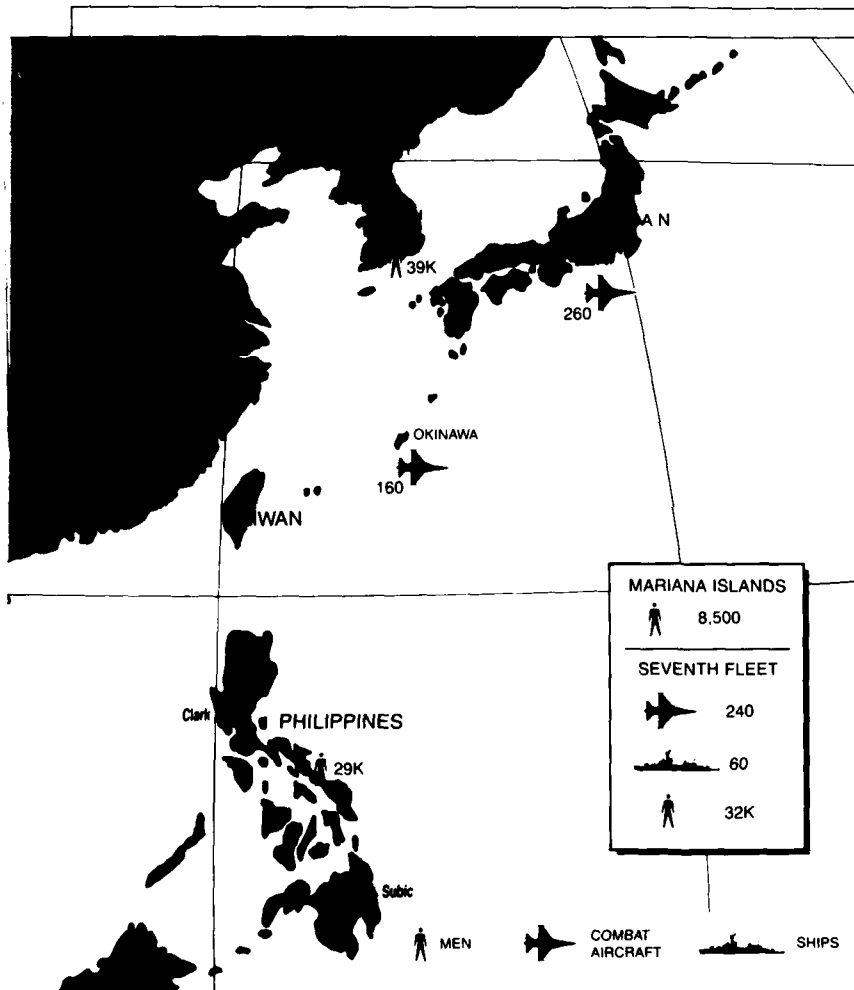
The Asian-Pacific commitment: U.S. forces stationed in and around the world's largest ocean — and the crucially important Seventh Fleet.

these matters until the region confronts a major crisis.

Consider the economic sphere. For several years Japan has been America's second largest trading partner. Asian trade with the U.S. now substantially exceeds European trade with the U.S. Paul McCracken is probably correct in predicting that by the 21st Century the economic center of gravity will be the East Asian rim, from Japan and South Korea southward to Singapore and Hong Kong. So there's no doubt that East Asia is extraordinarily important in economic terms.

Meanwhile, there are several significant bilateral problems in the U.S.-Japanese relationship and many defense assets in the region, both American and Soviet. We have 40,000 men in South Korea with 120 combat aircraft and at least rumors of some tactical nuclear weapons. We have men in Japan and 260 combat aircraft, including 160 on Okinawa. There are about 15,000 men in the Philippines in two major bases there. We have over 8,500 men in the Marianas. And we have the Seventh Fleet with 60 ships and 240 aircraft and 32,000 men. In addition there are a large number of C³I assets in the region, as was demonstrated when the President played tapes of our recordings of Soviet combat aircraft pilot communications before the shooting down of the Korean airliner.

The American military has not forgotten about East Asia. And neither has the Soviet military. There are 360,000 men in the four far-eastern military districts of the Soviet Union, most along the Sino-Soviet border. The Pacific fleet of the Soviet Union is the largest of the four Soviet fleets. There are over 100 SS-20s based in

the region that can strike every target in eastern China, Japan, Korea, and the Philippines. The Soviets have increased the number of ballistic-missile-carrying submarines from 11 to 24 in the last 10 years, and this is under the SALT I interim agreement constraints. Moreover, there is a significant Chinese military presence to consider.

Yet at the highest levels in the American government, in political and diplomatic terms, Northeast Asia could be characterized as fourth or possibly fifth in priority. Our perennial problems with our NATO allies leave little time for the top echelon to think much about the Northeast Asian region at all And among the top echelon in the current administration you really do not have a single individual who would consider himself a specialist on Asian affairs.

The problem is that we are constantly positioning ourselves for political, diplomatic, and military surprises in the region. Although there are many problems there, relative to the other regions of the world Northeast Asia always appears more stable in peacetime.

Our principal problems in East Asia begin with the prospects of political instability among our own allies. And this bears on the question of coalition defense in this part of the world.

We cannot focus on Northeast Asia without considering the Philippines. What happens in the Philippines is significant in terms of our western-Pacific military strategy, and in terms of perceptions, particularly by the Japanese, of their future role in the region.

I have been involved in a study of authoritarian, non-communist regimes that were not democratically elected, which covers about 100 countries. I wanted to find out what conditions were prevalent when major regimes collapsed, to develop a set of "early-warning" indicators of forceful regime change.

In most of the instances where regimes have fallen, there has been an economic downturn of about two years' time that followed an economic upturn — which suggests that once there is a period of economic growth there really is something to the phrase "revolution of rising expectations."

Many of the so-called ideologies of opposition, the main arguments against the regime, are articulated and developed in the universities. When there is a rapid pace of urbanization, with people crowded into the major cities and growing university attendance, there is further impetus for anti-government activity.

In virtually every one of the developing countries there is extensive political repression and economic corruption, so these factors are not useful indicators. It is a matter of the rate of change, how rapidly they are increasing and when they become a basic issue of public debate. This has now reached major proportions in the Philippines, where people in all walks of life are talking openly about the corrupt practices of the Marcos regime.

In most of the cases that we have examined, the influence of external powers plays a major role. Particularly with the U.S., it can be very important because the U.S. has a habit, when some of its authoritarian allies

are on the ropes, of waffling in its support for them. This is now happening with Marcos.

Finally, there is often a catalytic event, a spark that makes the smoldering come ablaze. The assassination of a major opposition leader is at the top of the list of catalytic events. The dead opposition leader becomes the martyr, the central organizing symbol of opposition to the regime.

What it all comes down to is that the Philippines is squarely in the red-line category. They have all of the principal conditions that we have identified in 12 other case studies as being present before a violent political overthrow.

This raises important questions for American political and military policy in the region. One cannot overemphasize the significance of the bases at Clark and Subic to American Western Pacific strategy, their stabilizing effect on Japanese perceptions, and their importance to the implementation of a swing strategy if we have to move forces rapidly into the Indian Ocean.

The Philippines makes the swing strategy at least theoretically possible. At the moment there are more Filipinos employed at Clark and Subic than by any other employer in the Philippines except the Philippine government. This is not necessarily viewed as a great success story by many Filipinos.

So I begin my observation about tensions and problems in the region by noting that political instability — in fact, regime change in the Philippines — is very likely in the short term and could have profound effects on American basing policies in that country.

A specific problem is in South Korea. We have been on the edge of another war on the Korean Peninsula since the Armistice in 1953. There is nothing of real substance to the term "coalition defense" with respect to South Korea. It is a bilateral relationship between Seoul and the United States. Korean-Japanese animosities continue to run very deep, particularly Korean distrust of the Japanese.

Prime Minister Nakasone made a very important step toward reducing this animosity by signing a $4 billion aid agreement in January of 1983, but basically the Koreans do not want the Japanese there to defend them and the Japanese do not want to be in Korea. They are deep economic competitors, and it is the United States that provides the necessary glue to the Japanese-Korean relationship.

The North Korean regime is going through its own succession crisis. Kim Il Sung, the man the Soviets discovered in Siberia and implanted in Pyongyang in 1946, is nearing the end of his career. He is evidently trying very hard to replace himself with his son, and there is deep opposition to Kim's plans among his other politburo members.

This is actually good news for South Korea. It means the North Koreans are somewhat distracted by internal politics, but not sufficiently distracted to prevent them from assassinating half the South Korean government as took place recently in Rangoon.

The possibility of South Korean retaliation is a continuing concern to American officials. A comparison of three places I have recently visited —

the Korean DMZ, the inter-German border, and the West Bank of the Jordan — reveals the DMZ as number one in terms of its potential for tensions to reach the flashpoint.

But political instability within South Korea is a problem that at the moment is more of a danger to American strategy and American interests than a direct attack by the North on the South.

Kim Dal Jung, the South Korean opposition leader, is now at Harvard. He has no intention of sitting back and writing his memoirs. He is planning, as was Mr. Aquino, ways to produce evolutionary or perhaps revolutionary change in his home country. He has quite a number of supporters, including many in the universities, the labor unions, and farmers who are very unhappy with the relatively tight authoritarian regime of President Chung.

I think major change is less likely here than in the Philippines, but the possibility is real. It could vastly complicate American political and military strategy in the region if we have a string of acts of political violence in South Korea.

Finally, let me turn quickly to Japan. Japan is the focus of our industrial policy debates, of our restructuring of our auto and steel industry, of threats to our computer industry. We have a number of distinguished American scholars of Japan, but I would submit to you we still know very little about the country. The Japanese commitment to western democratic processes is not as deep as one might suspect. Without American involvement, Japan is likely to take a very different course. The fact that some people in Japan want to see a

major, independent Japanese political, economic, and military force is undeniable.

Until very recently, and even in some sense today, every Japanese government has been confined by political barriers that have led to a very modest defense expenditure; presently this level is only 0.93 percent of GNP. There is still an absence of ammunition, a low level of readiness of forces, weak and vulnerable air defenses, vulnerable naval bases, and an inability to block the three straits.

Basically, the Japanese face an inability to defend their own territory from any serious Soviet conventional attack, not to mention Soviet nuclear attack. There will be a continuing American dialogue with the Japanese as to how a credible defense can be constructed. I think the Reagan administration has in fact made some very constructive steps along this line. But the Japanese have problems of which many Americans are unaware. They currently have a $30 billion budget deficit, and a $24 billion positive balance of payments surplus with the U.S., offset by balance of payments deficits with the Saudis and some of the other oil producing states.

I see the prospects for change in Japan's defense attitude originating with the present prime minister. Nakasone is smart and ambitious and he has a vision. De Gaulle is his hero. De Gaulle represents the pulling up by the bootstraps of a weak, divided country into a major political, economic, and military force.

Japan has a far greater capacity to influence global developments through this century than does

The United States and Japan,
under the government of Prime
Minister Yasuhiro Nakasone, are
solidly allied — while still evalu-
ating and testing the friendship
that has endured for over 35
years.

Japanese industrial might con-
tinues to be a challenge to the
West. Japan's steel industry is
the third largest of its type in
the world (after the US and the
USSR) and a pillar of the na-
tional economy.

JAPAN INFORMATION CENTER

67

France. Japan has the population of France and Britain combined. It has a gross national product far in excess of any of the European states, including West Germany. It has an extraordinarily cohesive population. There are 600,000 Koreans in Japan, but they are the only significant minority. Once there is explicit direction from the top, the Japanese can be expected to fall into line.

Neither the Soviet threat nor American pressure will lead the Japanese to do something different. The Japanese sense of great nationhood will. How long will the Japanese continue to be an economic superpower and a military pygmy? It has been over 40 years. Will it be 50 years? Will it be 70 years? Do you think it's likely in the year 2056 at the 75th MITRE conference on C³I we will still be talking about a Japanese defense budget of one percent of GNP?

We have some other problems with the Japanese, specific to C³I. We are a leaky government; they are a leaky government. The Russians do two things better than any other country in the world: they keep secrets and they steal secrets. Going back to the days of the Red Orchestra in World War II, the Russians know how to pry secrets from the Japanese. Consequently, there are major problems in the sharing of information with Japan — ASW technology, for example.

Presently we are moving into areas of defense technology where the Japanese are struggling over whether to share their knowledge with the United States — for instance, in fiber optics and specialized materials where they are ahead. These problems are going to become over time more rather than less acute for American decision-makers.

I would like to see the Japanese develop a strong, robust conventional deterrent force and defense capability solely to defend their home territories. This alone is a tall order for them at the moment and they are far from achieving it. The problem is that once they move in that direction, they may not stop with a limited capability.

When you suggest, as the Reagan administration does, that Japan acquire a thousand-mile sea lane protection force, you move into a very ambiguous area. It is too vague; it is hard to operationalize; it disturbs Japan's Asian neighbors. The Japanese themselves don't know how to interpret it. I do not think therefore that it is a terribly productive concept. More effective and less vulnerable air defenses, the ability to mine and block the straits, and to deny the Soviet fleet access to the Pacific in war time, are much more concrete and manageable capabilities.

The question is whether these capabilities, once required, will satisfy the Japanese. Over the longer term, I expect a continuing incremental build-up of Soviet forces in the region, not necessarily in support of any specific policy objective. You know the Russians and what they want: more — sometimes not in very well articulated terms. They just want more. They want to appear stronger. From their perspective it is better to be stronger than to be weaker. This has as much to do with the maintenance of their own regime in the Soviet Union as it does with threatening other countries. In fact, they have to threaten other countries to appear to be strong at home.

So while the Russians want more, the Japanese are scratching their

heads. They are saying, "What is it we want?" Japan is trying to figure out where it is headed now that it has produced an economic miracle. I suspect that if Nakasone or other leaders like him can provide a vision, the Japanese will follow. It may very well be a French-like vision — an independent foreign and defense policy, allied with Western interests, but not identical to them, striking out on their own in various regions of the world with a nuclear deterrent force, without any American military presence on their territory.

This is not at all infeasible for Japan in the last portion of the 20th Century. The question for American policy makers in the longer term is therefore whether we can manage such a fierce, economically competitive relationship effectively and still maintain a political and military alliance. Or will we find in time that it is not the U.S.-Soviet relationship we are worrying about, but a very complicated U.S.-Soviet-Chinese-Japanese four-tiered relationship in which none of the powers is fully allied with the others?

I would characterize Japan of the 1980's as the political equivalent of Xerox of the 1950's. I think they are a growth stock as a major political and military power. The challenge for the U.S. is to manage this growth effectively to maintain a peaceful and constructive relationship with Japan into the future.

Progress and Problems in Pacific Air Operations

The threat in the Pacific is growing. The North Koreans have 700 combat aircraft and the Soviets have 2,300, including 1,700 fighters and a substantial number of bombers. Because we are outgunned by the Soviets, we must coordinate our Pacific forces effectively.

We have made substantial progress in improving air operations in the past two years. Our air capability includes PACAF, Navy carriers, the Marine Corps, and other Air Force commands. Our Pacific forces have been modernized, and their training was improved. Other improvements are taking place in terms of logistics, facilities, higher rates of retention of experienced people, and C³I.

The challenges are several: we are a small force in comparison with the Soviets; we are deficient in long range and night capability; base survivability is a concern. And we need better C³I.

Regarding specific countries, Korea is still volatile, but the North Koreans probably would not attack unless they had Soviet or Chinese support. In Korea we have a combined C³I structure that works well in exercises and it is getting increased automation. We can be confident of our air capability in Korea if we have adequate warning.

In Japan, we are not as well off. We have a long way to go in C³. The Japanese forces don't have a joint command structure such as ours, and consequently it is hard for us to interface with them. We are developing ways to work with the Japanese self defense forces, for example through the BADGE-X air defense system.

One of our big needs is for more effective communications: reliable, jam resistant, and fast. The need for secure voice was apparent during the recent search for the downed Korean airliner. Secure voice gives a commander instant feedback. Data systems such as WWMCCS can help but are not a substitute for good voice and print communications systems. We have made good progress in Air Force participation in maritime operations. We need better capability to coordinate large scale offensive joint air operations, and that is being developed.

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In terms of air operations, when I talk about the Pacific, I'm talking primarily about Northeast and Southeast Asia. But I am not excluding the rest of the Pacific Command region, and

General Braswell was Commander-in-Chief, Pacific Air Forces, from 1981 to 1983. His command comprised more than 34,000 personnel at eight major bases in Japan, South Korea, the Philippines, and Hawaii.

Lieutenant General Arnold W. Braswell, USAF (Ret.)

Former Commander-in-Chief, Pacific Air Forces
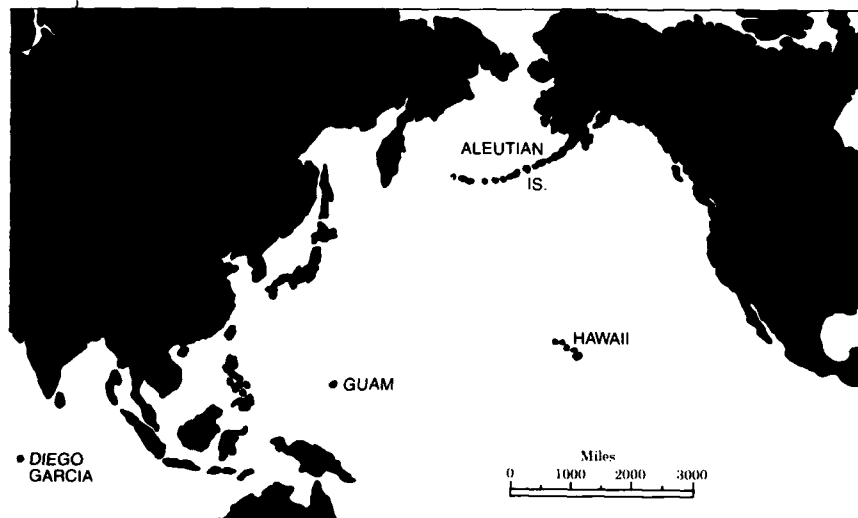
From the Indian Ocean to the Aleutians is the vast stretch of the Pacific Air Forces' command and control responsibility. They must be ready to defend anywhere — as in strategically vital Diego Garcia.

that includes Hawaii, the Aleutian Islands, and a number of other places where we have responsibilities.

I would not want to argue whether or not our relationships with Korea and Japan constitute coalitions. I think it is true that if they are coalitions, they are certainly in a different category from NATO.

We obviously have bilateral relationships with both Korea and Japan. A trilateral relationship, in terms of military cooperation, is indeed a long way down the road. But certainly the requirement for bilateral combined operations, both in Korea and Japan, is something that we must address, and I propose to talk about that today in the context of C³I.

To set the stage. a brief word on the threat, which is substantial. The North Korean air threat — an obsolete, although rather large, force — comprises some 700 combat airplanes. The Soviet Union has a much more modern force in the Far East than five or six years ago. They now have some 2,300 combat airplanes; 1,700 of those are fighters, and most of them are now third generation fighters. They have a substantial number of bombers, most of which can reach any of the bases we have in Japan or in Korea.

We have made a great deal of progress in the Pacific in air operations and air capability. Let me point out that we are talking not just about the U.S. Air Force in the Pacific, and not just PACAF. In addition to PACAF and other Air Force units, we have U.S. Navy air capabilities, including the carrier force in Japanese waters and the carriers based on the West Coast that operate in the Western Pacific in the Indian Ocean.

The Marine Corps has squadrons in Japan and Hawaii, as well as on the West Coast. The Air Force, in addition to about 220 fighters and attack aircraft in PACAF, has a small force of B-52s on Guam. We have modernized our units with F-15s, F-16s, and A-10s. We've upgraded our F-4s. We have airlift units, some of which are assigned to PACAF for operational control. Others, the long range strategic airlift aircraft, traverse the Pacific constantly from the West Coast out to Diego Garcia. At any time you can find 30 or 40 C-5As and C-14s in the Pacific Command area.

All those airplanes, in addition to others, (especially reconnaissance resources, which are under SAC), make up our air capability in the Pacific. Unfortunately, when we add it all up, we are still outgunned substantially by the Soviet Union, and that fact is one that we have to keep in mind at all times.

That's why it is important that we make the best possible use of our capability — that we be able to coordinate effectively our air operations among all the services and also with our allies. Therein lies the great importance of good C³I systems and capability.

Today in the Pacific as well as in other places around the world, we have the most realistic air training that we have ever had in peacetime. I think I speak not only for the Air Force, but for the Navy and the Marine Corps as well.

For example, in the Philippines we have our COPE THUNDER exercises,

similar to the RED FLAG exercises conducted by the Tactical Air Command in Nevada. Air crews from all services and occasionally from our allies are exposed to simulated combat conditions during a two-week exercise, repeated seven times or more each year.

Logistic support is improving in terms of fuel capability, munition stockpiles, and spare parts, though improvements still need to be made.

We must have facilities that are capable of supporting sustained air campaigns. Our facilities in PACAF were somewhat neglected for a number of years after the Vietnam War. In the past two or three years we have been able to get money to improve them, and that's helped a great deal.

The quality of our people is improving. Retention rates are up throughout the Air Force. I'm pleased to be able to report that they are particularly high in Pacific Air Forces. If our retention rates continue as they are, we can anticipate a gradual increase in experience levels and capability of our people, both technicians and air crews, in the years ahead.

And finally, our command, control, communications, and intelligence systems are also improving.

What about challenges or problems? I've alluded to one already, the fact that we are just not as big as we would like to be to cover that vast region and to provide a totally effective deterrent.

We are deficient in long-range aircraft and in night capability. The only long-range offensive aircraft that we have in the Pacific are the 14 B-52s on Guam. We have a declining number of F-111s in the Air Force, and unfortunately we have none in the Pacific.

We are outranged by the Soviet Backfires, Badgers, and Fencers.

We also have an inadequate capability for operating at night or in marginal weather conditions. We hope to improve both our range and night weather capability with the dual-role fighter if it is approved and produced, but it will be a few years before we see it in operation.

Our stockpiles of spares are improving, but perhaps not as quickly as we would like. Of course, in the context of a conflict confined to the Pacific — Korea, for example — we could expect to draw spares from units in the States and ship them to our units in the Pacific very quickly. But if we have to fight on a global basis, that option may not be available to us.

We have to make some improvements in base survivability, and that's particularly true for our bases in Japan, which as I indicated are within the range of Soviet air.

In Korea, we have hardened our bases and we are planning to improve our short range defenses at those bases. For example, the Air Force is planning to procure Stinger missiles and to operate them with Air Force people. This is the first time that the Air Force has been involved in the anti-aircraft artillery business in many years. We are going to do that to augment the short range anti-aircraft artillery that's provided by the Koreans.

We do have C³I problems and deficiencies. I'll say more about that later.

Let me turn first to the situation in Korea. It continues to be volatile. But I'm more confident now than I was a

few years ago about stability there, and also more confident about U.S. and ROK ability to handle an attack across the DMZ, assuming that we get the expected warning.

Although it's not a foregone conclusion, my air commanders and I have been in agreement for the past year or so that given expected circumstances, we would have a reasonably good chance of achieving air control in the Korean environment.

That's good news, but I would point out at the same time that there are still some "ifs." One is warning. Another has to do with such things as the vulnerability of our bases to air attack or commando attack. Continued improvement in U.S. and ROK capability is necessary to assure that we can handle an all-out attack by North Korea.

A political factor that influences the stability of the Korean situation is the probability that North Korean leaders, in my judgment, would not attempt to launch a large-scale attack against the Republic of Korea unless they believed they had the support of either China, the Soviet Union, or both. The policies and actions of these two nations will continue to have a major effect on stability in the Korean peninsula.

I am pleased with the progress we have made in our air command and control capability. I would point out that for five years now we have had a combined command and control structure in Korea. All of the Republic of Korea forces are under the command of that structure at the present time. The U.S. units (except for air defense alert forces) are not, but they would be placed under that command structure quickly in the event of a crisis or contingency.

Osan Air Base is headquarters for the Combined Air Component Command. We have there a hardened, modern tactical air control command center, with Korean and U.S. officers and other personnel manning the center 24 hours a day. We carry out exercises regularly to maintain our capability to operate together in a crisis. It has worked very well in spite of the fact that we do have language problems. For example, we have to put out the air tasking order in two languages, and we have some remarkable little machines capable of doing that. We have made significant progress in command and control, and in intelligence fusion.

We have the capability of taking all U.S. source intelligence, sanitizing it as necessary, and making that information available to the combined command structure quickly. We still don't do it as well as we would like. However, we have programs under way, including the Constant Watch Program in which MITRE is involved, to further automate our intelligence and command and control facilities. We plan to bring our intelligence facilities together in a hardened environment in the new combined operations and intelligence center. When completed, it will provide a modern, well-automated air command and control system, one that we can have confidence in.

We are not so well off in Japan. For many years we focused on the Korean environment because that was the most volatile area. But recently we have been giving increased attention to assisting the Japanese in planning for the defense of Japan.

The Japanese forces still have some work to do in order to achieve the joint command structure that they need and want. It's somewhat difficult to interface and interoperate with them in joint operations. We are, however, making progress together.

The Japanese are modernizing their air defense command and control system under the BADGE-X program. We are attempting to upgrade our air communications along parallel lines to be able to operate together with them, using some of their facilities, but with our equipment and systems. The goal is for PACAF and Fifth Air Force to be able to communicate effectively with U.S. air units stationed in Japan or deployed to certain bases in Japan, and to control those units efficiently.

We don't yet have such capability, and the principal limitation is communications. For example, in spite of the improvements we have made in our secure voice networks, we have not yet achieved the secure voice capability we need in many of our theaters to give the commander the confidence that he can get on the phone quickly and talk to a subordinate commander in a crisis.

Although better precedence discipline would help (and we're working on that in PACOM), the principal problem is the lack of capacity, and that must be improved, because secure voice is so vital to the command function.

As an alternative, we have learned to use the WWMCCS computer network. For example, Lt. Gen. Chuck

Donnelly, the Fifth Air Force commander, used the network extensively during the search for the downed Korean airliner, because he couldn't talk reliably on secure voice to some of his units or to PACAF. He typed out his messages on the computer terminal, sent them to us, and we would respond to him in the same way. That's a substitute for secure voice, but not an adequate substitute. I believe that the value of secure voice, with its instant feedback advantage, is not fully appreciated by many of our C³I planners and decision-makers.

We should not lose sight of the proximity of the Soviet threat to Japan and it's implication for C³I. After all, the Soviet-occupied islands are only 30 miles from Hokkaido. While they do not have large forces on those islands, they nevertheless have facilities and forces which can be increased at will. And the air threat is ever present.

An area I'd like to mention, one where we have made progress, is Air Force involvement in maritime operations. We have for many years talked about Air Force support for the Navy and maritime operations. Unfortunately, until a few years ago we weren't doing much about it. Now we are.

We signed a memorandum of agreement between PACAF and PAC fleet about two years ago. This was followed with a similar agreement between the Navy and Air Force in Washington. For the first time in many years our PACAF air crews are periodically getting the opportunity to participate in maritime exercises, and our joint Air Force/Navy capability at sea is improving.

This capability was vividly demonstrated last fall in a fleet exercise called Fleetex 83, conducted in the northern Pacific. We had Air Force tankers, a large number of them, supporting Navy carrier-based aircraft. We had Air Force E-3As flying out of Japan supporting the fleet. And we had F-15s flying out of Alaska and the Aleutians providing air defense for the fleet. In addition, B-52s flew out of both Anderson and the West Coast to support the exercise. The exercise was very successful.

All of this, of course, required a lot of coordination. We made it work, but it was a lash-up arrangement. One of the important tasks we have in the Pacific, particularly at PACOM and PACAF headquarters, is to develop a better capability for coordinating large scale air operations, particularly offensive operations. Large scale offensive operations must integrate not only SAC, but PACAF and U.S. Navy and Marine Corps assets as well, and possibly assets of our allies. Work is under way in PACAF to provide the command and control capability we need to coordinate such complex air campaigns. (We are in a better situation when it comes to defensive operations.)

We have C³I needs in the Pacific that are still acute. What are needed most are effective communication systems — systems that are secure, reliable, jam-resistant, survivable, responsive, and fast. From the airman's point of view, we have to be able to communicate quickly. The communications we need to do that are better now than they were, but they are not as good as we would like. Computers can help. But my perception is that the basic communication structure needs to be improved more than computer capacity. We have made progress, but we still have much to do to provide adequate C³I in the Pacific.

Luncheon Address
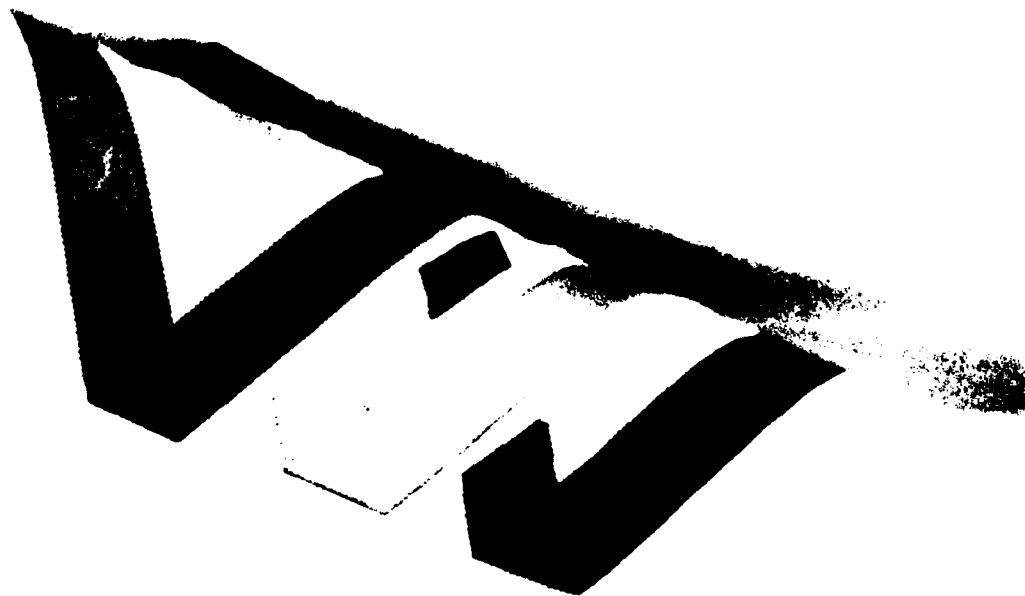
Luncheon Address

When I was in the Pentagon there was a great deal of concern that the navies of the NATO nations had 23 different kinds of so-called standard fittings on the refueling lines, and that the 20-millimeter ammunition of another coalition, the U.S. Air Force and the U.S. Navy, would not fit the breeches of the opposite services' 20-millimeter guns. So there are some fundamental things one has to address in coalition defense but there are also some things that are somewhat more sophisticated.

The ability to coordinate command and control with our allies is fundamental. Certainly to be interoperable is fundamental. To be identical, I think, is not particularly important. It might even be counterproductive in some cases.

I'd like to look at some of the trends in technology that affect coalition defense and some of the trends that are going to affect our future.

On the occasion of Jimmy Doolittle's 85th birthday, Under Secretary of the Air Force Pete Aldridge compared command and control for General Doolittle's famous mission with command and control today. He pointed out that General Doolittle's mission was fairly straightforward: to drop 60 500-pound bombs on Japan. That mission took four months from the initiation of the idea to the execution. The entire planning effort, it was said, involved three very brief written messages. Sixteen B-25's were involved in the entire operation. To contrast that with the recent Bright Star exercise, in which 162 500-pound bombs were dropped on Egypt, it took six B-52s, 33 KC-135s, thousands of coordinating messages, and six months of planning and briefings.

I thought we might look at a few fundamentals. One is that we C³I folks use cryptic communications. This is the first symposium I've attended where, along with a list of the speakers, there was a list of acronyms included in the program — so you could tell what they were saying. When Gerry Dinneen was Principal Deputy Under Secretary of Defense for Research and Engineering, he commented: "We go to the Congress and we tell them that our WWMCCS has got to have a BMEWS upgrade, our Fuzzy Sevens have to be replaced by Pave Paws. We want to keep our PARCS and improve our MEECN with more TACAMO and begin planning to replace AFSATCOM with triple S, and then we wonder why the Congress didn't understand."

Mr. Augustine is Chairman of the Defense Science Board and President of the Association of the United States Army. He has served as Assistant Secretary of the Army for Research and Development and as Under Secretary of the Army.

Norman R. Augustine

Vice President, Martin Marietta Aerospace; President, Denver Aerospace

The second caution I would offer has to do with the danger of extrapolating the present as we look at the future. Because if we do, most certainly the war we prepare to fight will be the previous one.

But there are many opportunities for change, and it is important that we not overlook the warnings that we receive from some of the problems of our systems. We have had some warnings. It is apparent to me that we will fight outnumbered — we as Americans. I'm sure that you are all familiar with Lanchester's Law where he points out that quantity is important not as a linear parameter but as a square. While historical data suggests that it is not as important as a square, it is certainly more important than the first power. So numbers are important. The key, though, to Lanchester's equation is that it applies to forces that are in a location to impact the decisive battles, the decisive events. That, of course, is what C^3 is all about — to get appropriate forces at the point of decision.

There are two underlying trends that I see affecting the impact of our C^3. The first is that in our efforts to get forces to the decisive point, we're developing an enormous capability to find targets, to keep track of the enemy. There are very few places to hide anymore. Many of our sensors can now see through clouds. We used to fight by day and rest by night. Now we can see quite well at night with the sensors that are being developed. This might suggest that the nature of battle will change, becoming less of a set of piece plays

than a continuing enterprise with surges that rise and fall. The notion of hiding in the air has become particularly difficult. One AWACS can keep track of a million cubic miles of air from tree level on up. The same concept is true to a lesser degree on the ground, particularly if you should radiate RF energy. And on the surface of the ocean, it's become very difficult to hide.

The second trend is that if you can see a target, you can hit it. Now that may not sound terribly profound but I think again of history. At Peenemünde during World War II, the Germans were developing the V2 rocket. Their goal, it was said, was to make it more dangerous to be at the predicted impact point than at the launch point. We still have much of that problem. If you look at the number of rifle bullets fired per casualty produced from the Civil War up through Vietnam, it turns out to be between 10,000 and 100,000 rounds, or around two-tenths of a ton per casualty; artillery, about three tons to destroy a tactical target such as a vehicle. TACAIR runs three to five tons and that's why we were delivering conventional ordnance in Vietnam at the rate of about 0.7 Hiroshima weapons per month.

I think C^3I developments are making great progress on finding targets; and our ability to hit targets is also becoming considerable. The problem is that most tactical targets are transient, having an information "half-life" that is measured in seconds or minutes in many cases. The challenge is to put together the sensors and the communications with good fusion systems which permit *real-time* targeting. But most important is to tie them to delivery systems so we don't have

a C^3I system that just stands off on the side and provides information to the Pentagon. Rather, it must provide information to the people on board ship or in the cockpit or at the lanyard of an artillery piece. The weakest part of our overall target-destroying system is the last part — the ordnance that is delivered.

How will we fight in this new technology environment? I think that at first we should expect very high losses. In the October War of 1973, in the Middle East, the three powers lost about a third of their major assets in the first 18 days — tanks, aircraft, and so on.

Second, I think we need much more emphasis on countermeasures. Today if you fly through most airspaces of interest to military operations, particularly in Europe, you are at almost all times, at most any altitude, within the envelope of *some* air defense system. You're almost always under coverage. The hope for survival then depends greatly on the effectiveness of countermeasures. Once again, if one compares the effectiveness of all the guided missiles that have been launched in all the wars in history with the performance on the test range of those same missiles, one finds that they perform about 30 times *less* well in combat than they do on the test range. The key to surviving on the modern battlefield lies in assuring that the factor stays at least that large.

I believe that countermeasures are a major part of the solution. In the antiship missile experience in the Mid-East in the 1967 war, some five missiles were fired against an Israeli

ship and, if I recall, four of them hit and one went into the wake where the ship was going down. In contrast, six years later many more weapons were fired with little effect — because of the increased effectiveness of countermeasures in the interim.

One of the most important countermeasures is probably the use of deception. Tactical deception has played an important role in wars throughout history. The deception one can use effectively in the face of today's sensors is, however, very different from what was available in the past. Much of what would have been done in the past would not work at all today. Some of what was done in the past did not even work then. In World War I the Germans built an airfield out of wood to try to draw British bombing missions away from the real airfields. However, the wooden airfield wasn't drawing any attacks. So the Germans tried to improve it and finally they had wooden airplanes, wooden runways, and wooden hangars; and they spent almost as much as a real airfield would have cost. They finally gave up because the British wouldn't attack it. After about three weeks of inactivity, a single British airplane flew down the main runway and dropped a wooden bomb! That, I think, highlights the importance of effective deception — deception geared to the sensors being used.

Third, I see the future being one where we must possess a much more diffuse structure of combat elements. The targets we offer the enemy are much more widely distributed, and I would hope that we would have

fewer critical nodes and that there would be fewer single items of high value when viewed as a target. We've been going in somewhat the opposite direction from that in recent years. I think the trend of the future, if we're going to survive, is going to have to be one of much more mobile, more diffuse battle structures. That has the implicit requirement for better communications, better logistics, better training, and better mobility.

In summary, I see the future consisting of, as you look at the technical aspects of the battlefield, a worldwide information network of sensors with various weapon systems embedded into this network. Users can then tap into the particular part of the system they need, including our allies who would have a key to just that part of the system to which they are approved to subscribe. It is particularly important that we design the system with our allies in mind. We very clearly can't fight the war alone, particularly with the difference of spending levels of the Soviet Union and ourselves. We're dependent on our allies just as they're dependent upon us.

It will be noted that nothing has been said to this point explicitly about coalition defense. This is because basic technology does not recognize geopolitical boundaries — only the manner in which we choose to employ technology is so affected.

The whole point is that we can't do the job alone, that we need coalition defense, and C^3I is the glue which, to a very large degree, binds such a defense together. But a word of caution is in order — it may be that we're having this meeting on the wrong

subject. We ought to change the words that C^3 stands for, because if we get in trouble my guess is that it will be in the areas we really should have studied at this meeting: countermeasures, complexity, and cost. I think those are the real enemy that will stand out as we view today's future with the hindsight of the year 2020.

Session 4   Alternatives for the Future

Chairman:
Dr. Jack P. Ruina

Professor of Electrical Engineering,
Massachusetts Institute of Technology

Dr. Ruina has served as Director of the
DOD's Advanced Research Projects Agency
and as President of the Institute for Defense
Analyses. He has served on many advisory
committees and was a member of the Gen-
eral Advisory Committee of the Arms Con-
trol and Disarmament Agency and a senior
consultant to the Executive Office of Science
and Technology.

Role and Limits of Technology

Prodigious growth in computer technology in the 1980's will influence defense capabilities and alternatives. Improvements expanding the number of transistors on a chip by 100-to-1 and *software improvements* such as the high-order language Ada will effect a thousandfold rise in computer cost-performance. By the late 1980's, supercomputers will have at least 100 times more capability than today's machines and very small, inexpensive embedded computers will perform at levels unenvisioned today. The use of personal computers for military support will increase productivity, and artificial intelligence will yield benefits that are difficult to quantify.

The hardware/software revolution will let us devise a strategy of conventional defense to deter conventional attack without resorting to nuclear weapons. This involves using enhanced tactical intelligence, superior precision-guided anti-armor weapons, and enhanced anti-submarine warfare. Application of advanced *computer technology to coalition defense* requires that we find a way to exchange technology while preventing our adversaries from closing the gap.

In this decade, I believe, the age of the computer will arrive. It will be an era in which the computer will profoundly influence society, the economy, and the defense posture. The computer's influence on our defense capabilities will offer a potential alternative with profound implications. I base that statement, first, on a technical view of what is going to happen to computers in this decade, and, second, on the applications and implications of those developments.

Summing up what is going to happen, I would say that during this decade, there will be a thousandfold improvement in cost performance of computers; that is, computers available to us in 1990 will have a thousand times the cost performance of computers that were available in 1980. And a thousandfold improvement is so large that it is difficult to plan for the future.

I can foresee three independent changes in computers during this decade. First, and easiest to understand, are the hardware changes that will derive from ongoing developments in semiconductors. To oversimplify those developments, the geometry of microchips in this decade will go from about 5-micron spacing of the elements on a chip to about

Dr. Perry was formerly Under Secretary of Defense for Research and Engineering, responsible for weapon systems procurement and research and development. He is currently Senior Fellow at Stanford University, director of several corporations, and a member of several U.S. Government advisory boards.

Dr. William J. Perry

Senior Vice President, Hambrecht & Quist

0.5-micron. The objective of the Very High Speed Integrated Circuit (VHSIC) program in the Department of Defense, for example, is to reach half a micron in the 1986-1987 time frame, with this capability entering military systems by the end of the decade. Now, a compression of 10 to 1 in the linear dimensions of a chip means an expansion of 100 to 1 in the number of transistors that can go on a chip. In the semiconductor industry, the improvement in cost performance has grown linearly with the compression in area (that is, the compression of the number of transistors per square centimeter). So I can project, with a reasonably high level of confidence, about a 100-to-1 improvement in cost performance due to geometry.

The second major change will be in the software and architecture associated with computers and in computer design and implementation. For example, the introduction over the next four years of the high-order language Ada into the embedded computer systems of all new military applications, while harder to estimate, could mean an improvement factor of two or three. Broadening one's view of cost performance to include not only the cost of acquiring a system, but also the cost of operating, maintaining, and programming it, I believe that even larger improvements can be expected with the use of a standard high-order language in the Defense Department.

Ada is the leading edge of a larger defense program known as the software initiative thrust which, in my estimation, will lead to about a 10-to-1 improvement in cost performance.

Multiply this by the 100-to-1 improvement effected by the hardware improvements to reach my 1000-to-1 cost performance objective.

A profound series of changes will be possible because of these hardware and software developments, some of which are fairly obvious and easy to predict. The easiest extrapolation of capability is probably in the so-called supercomputers. By the end of the decade, we will see supercomputers at least a hundred times more capable than the Cray machine is today. More important, perhaps, will be the impact of the very small embedded computers in strategic and tactical systems, performing at a higher capacity than can be envisioned today. At an intermediate stage, the proliferation of personal computers in the military will enhance productivity as it is now doing in business and industry.

More difficult to assess are the consequences of the introduction of artificial intelligence technology. In the course of this decade we are sure to see substantial improvements in commercial and military systems from the introduction of artificial intelligence capability.

The idea of artificial intelligence is as old as the idea of computers. Ada, Countess of Lovelace, the first computer scientist, looked seriously at the notion that machines might be able not just to calculate, but to think. After lengthy consideration, she decided in the negative.

To a very great extent, the Countess of Lovelace's imagination was limited by the technical capabilities of the machines in those days. About

100 years after Ada offered her opinion, an electronic computer was built. And the computer scientists of our day began to reexamine her question. Most of them still come down on the negative side of it. But one of them, Alan Turing, reconsidered the question from first principles. The difficulty of trying to estimate whether a machine can think, he suggested, is that we have great difficulty defining what we mean by thinking. He proposed a test for determining whether a machine can think.

In the Turing test, a machine was put in one room, a human being in another room, and a referee in a third room. The referee would communicate with the machine and with the human by teletype. The referee, not knowing which room had the machine and which the human, would try by a series of questions to determine which was which. Turing said if we can devise a machine that can consistently fool the referee, then we should say that that machine thinks. Computers today are not capable of passing the Turing test, but computers at the end of this decade, if a thousand-fold improvement is achieved, will be approaching that level of performance.

The consequences of revolution in artificial intelligence will be so profound that I will not even try to estimate what it all means. The consequences of the hardware and software revolution I described earlier, however, are reasonably predictable. What future alternative do they pose for the Department of Defense? In broad terms they give us the capability of devising a conventional defense

that, by itself, is capable of deterring a conventional attack without resorting to nuclear weapons.

There's a philosophical question as to whether we ought to take that posture, with or without the capability. My view is to get the capability first and develop the posture second. But I do believe that it is possible, practical, and economical to achieve that capability by vigorous and judicious application of advanced computer technology.

Let me sketch the three major components involved in achieving that capability. First, and most important, perhaps, is the application of this technology to greatly enhanced tactical intelligence so that we can deal with numerically superior forces.

I asked an Israeli general how it was that the Israelis won their so-called war of liberation even though they were vastly outnumbered. His answer was that the Israelis had never fought a major battle in which they did not have local numerical superiority. They were able to do that because of their greatly superior tactical intelligence — their ability to know where the enemy forces were deployed — and their ability to move with great speed from one spot to another to take advantage of that intelligence.

So it seems to me that having a significant advantage in tactical intelligence is critical in being able to deal with an opponent who outnumbers you, which is the problem we face in Europe today.

The second critical component is the development of superior precision-guided anti-armor weapons to cope with the Soviet advantage in armored forces. Third is enhanced anti-submarine warfare to assure our continued control over the seas. All of these military advantages depend on our achieving a greatly improved capability in computers in this decade.

The implications in this strategy for coalition defense are many. There is no doubt that the United States alone has a vast advantage over the Soviet Union in the field of computer and microelectronic technology. There are two related questions, however: how do our allies fit into this picture, and will the Soviets be able in time to close the gap?

First, if we apply this technology in large quantities to operationally deployed equipment — for example, in Europe — we face the issue of the interoperability of that equipment with that of our allies. We must cooperate with our allies from the very earliest stages in the development of this equipment if there is to be any chance of interoperability.

The second implication is a little more subtle, but equally profound. While we enjoy a great advantage over the Soviets in computer technology, in most aspects of this technology we are at a par with our allies and, in some aspects, slightly behind them. It would be incredibly arrogant of the United States to assume that we could advance in this field without our allies, who have some of the best technology in the world. We rightly try to protect our technology from the Soviets, but this practice is enormously counter-productive if it inhibits us from getting the benefit of our allies' technology.

We have an alternative for the future, but it is only a potential alternative. It is not going to happen automatically. It is not going to happen without pushing this technology hard, and it is not going to reach its fullest extent without developing a real program of cooperation with our allies.

Industrial Trends

The changing industrial situation has a strong interaction with our future security arrangements. We must learn how to function today in relative technological parity with our allies. Many technologies of military relevance are driven by the commercial rather than the military marketplace. Industrialized nations are realizing that they must find their niche in the high technology world. Moreover, each nation needs some measure of technological and industrial independence. The concept of coalition security implies nations working together in defense areas, without undue security constraints. In electronic warfare, intelligence, and space, for example, coalition defense requires cooperation at all levels of research, development, operation, and support — and once systems are fielded, continued sharing of intelligence and capabilities data. Existing constraints on information flow make such communication extremely difficult. A security coalition, to be effective, requires a better mechanism for dialog across the broad industrial base, with reasoned policies and procedures for classifying and handling information.

The industrial situation is actively changing and will impact the way we arrange for a secure future. Today, we have to learn to function in a world where, in many areas, we have relative technological parity with friends and allies. While it may be true that the U. S. can retain a technological and industrial advantage generally, it is clear that in specific areas relevant to security and defense, others will match us sufficiently to qualify as competent independent forces.

Today, many technologies relevant to the military are driven by the commercial, not the military, marketplace — electronics and robotics are clear examples. Industrialized nations realize that to remain viable political entities, they must participate in the high technology affairs of the world and find their special niche. Furthermore, the first prerequisite for a healthy western democracy is a measure of technological and industrial independence. It seems inevitable that military allies will be economic adversaries and that many relevant military technologies will be driven by the nonmilitary commercial marketplace.

The concept of a coalition security is inescapable today. We can no

Dr. Hermann was formerly Special Assistant for Intelligence to the Under Secretary of Defense for Research and Engineering. He has served as Assistant Secretary of the Air Force for research, development, and logistics; Principal Deputy Assistant Secretary of Defense; and in various capacities at the National Security Agency.

Dr. Robert J. Hermann

Vice President, Systems Technology for the Defense Group, United Technologies Corporation

longer either think or behave as though we can handle it alone. We have no real alternative but to depend on allies, friends, and coalitions. Further, although we may have excuses for being numerically inferior, we have no excuse for being substantively inferior. The U. S. and its allies and friends are superior in wealth, population, and industrial capacity, and have a more talented work force. To remain secure, we must see that these strengths are leveraged. Too many of today's practices and perceptions are based on the arrogant premise that the U. S. will retain a superior technological position across the board and that sharing information with an ally is tantamount to providing it to the Warsaw Pact.

Let us take some specific examples. Computers, microelectronics, communications, and software are areas where it is not obvious that we have the necessary elements in place to be dominant. Not to deprecate our ability, it is clear that we are not an overwhelmingly dominant force; other nations and other societies have the capacity to be equivalent and independent. They can participate, in some cases even lead. But it is quite clear that we must all work together on smart weapons, reconnaissance and target acquisition, communications, data handling, fusion, analysis, and so forth — and without undue and unnatural constraints.

Another critical area is electronic warfare. Because of national requirements, our allies are progressing rapidly in the field of electronics.

Moreover, military and political leaders increasingly recognize that the management of electronics and signals is essential to modern defense and security. We should surely expect our allies to want a measure of independent capability based on their own industrial skills in this fundamental area. We can expect them to be competent and equivalent to us in many ways. Coalition defense and cooperation between nations demands cooperation in electronic warfare, and that means cooperation at all stages — research, development, production, operation, and support.

Electronic warfare is not peculiar in this regard but it stands out as an intricate problem demanding a shared appreciation of your potential opponent, and a shared appreciation of your offensive and defensive capabilities, so that you understand what you are up against together and that you are going to go it together.

Very often, electronic warfare demands sharing of intelligence and friendly force capability, both of which are very difficult now. Operationally too, once the equipment and techniques and people are fielded, it is important to be able to share intelligence, to share capability, and in ways we find extremely difficult now because of constraints on information flow.

Another area worth examining is space. The U. S. has had a clearly dominant position in space for the past few decades, and that is likely to continue for some time. As in electronics and the information sciences, however, participation in the technologies and industries necessary to extend humanity's domain into space is

important to any healthy, industrially advanced nation. Space can stir the imagination with its frontier-like quality and can cause nations to devote an otherwise irrational proportion of their wealth to participate in its exploitation.

It appears our friends and allies are following exactly that perspective and are applying resources to space-related activities beyond what might be directly analyzed as economic and security needs. From all appearances, that effort will accelerate as their electronics, information sciences, and other related industries mature. We must anticipate the need, therefore, to cooperate in new ways in space-related projects and activities important to collective security — in communications, navigation, meteorology, reconnaissance, surveillance and intelligence, and even in weaponry.

Intelligence is a key area that will surely be affected by parity in electronics and information sciences and perhaps, by a growing competence in space on the part of our allies. The U.S. will probably remain the dominant force in intelligence in the Free World for a long time for a variety of reasons. One is the long-standing and very close relationship between our industry, military, and intelligence activities. For several decades we have been served by a very competent work force, with the finest of industrial and technological bases, on a global program that spans the entire spectrum of military and national security problems and includes a variety of friendly and allied nations. For these reasons, we will probably remain an overwhelmingly dominant influence in Free World intelligence processes for the foreseeable future.

Nonetheless, our friends and allies are strengthening their own technical capability and will want a more equivalent relationship as their contribution increases. For our part, it is clear that the more they can contribute, the more we will ask of them.

As the relationship between sensor systems, weapon systems, and the forces becomes more complex and interactive, the reconnaissance and target acquisition capabilities of one nation must support the weapon systems and maneuver elements of another. Then access ranges and timeliness will demand much better integration between the elements of combined forces.

We are fielding reconnaissance intelligence systems that span broad areas, look deep, respond in real time, and extend over forces not totally American; and we can expect increased exchange requirements coming from our allies. We, in turn, will demand more from our allies because they are capable of more; in fact, they are fielding relevant systems at present. It is very clear that we need to work together; in particular we need to rationalize the classification and security-handling procedures that surround the intelligence field.

Other, classified areas of technology being worked on today are also important to the tactical arena, in terms of people, institutions, and processes. In due course those areas will have to emerge from cover and be treated in an alliance or coalition sense. As another example, I would identify computer-aided design as an

area in which we need to work with allies and friends. The process of moving all those transistors into that compressed space will increase the portion of operational content on the chip. This will increase the burden on the automated design function to be closely coupled with the operational problem. It means that we must understand what the operational integration implications are much earlier in the design process, and that effort is going to require cooperation with friends and allies at the design level.

These are some of the areas where I believe we need to anticipate a change in the industrial process. In the U. S., we go to great pains to bring industry, academia, and government activities together in support of our national defense and security needs. We work hard at making it possible for the people involved to be informed and to discuss the national security issues together. This phenomenon has been prejudicially labeled the military-industrial complex with revolving doors. However, it is the primary reason, in my view, for our strength today. In my judgment, it has provided for the best-informed military systems engineers in the world.

Now what makes us believe we can achieve an effective coalition defense without the same type of interaction across the industrial base that supports it? I believe we need much better mechanisms for dialogue across national lines, to include the government, academia, and industry of all cooperating nations. It should include rational policies and procedures for handling the classified information problem, for intelligence, for operational data, and for technological data.

Finally, a word about technology transfer. Too much of our present behavior is unilateral. It is difficult to conceive how we can defend ourselves under these circumstances. I have never seen nor heard a self-consistent concept for stringent technology transfer controls in the context of depending on allies and coalitions. Conversely, I have not heard a self-consistent theory of how we would defend ourselves alone. Of course there are risks in the leakage of technology to the Soviets, but there are also risks in the failure to cooperate with allies and friends essential to our security.

As we know from our own national circumstances, a sound security policy in a democratic process requires more than a warehouse of weapons. It requires a consensus of political will, a healthy economy, an effective industrial capacity supported by the leading technologies, and an educated and trained work force. It requires a rational connection between operational concepts, resource allocation, and system design that cannot be made unilaterally. It means citizens participating in and benefiting from national security expenditures. That is not only true for the United States; it will be true for all nations.

A sound security posture for coalition defense requires no less than that. It is extremely difficult; but what is our alternative?

Some Reflections on Alliance Strategy and the Problem of Command, Control, and Communication

The political aspects of the C³I problem lie in the relationship between political decision-making and the use of forces and strategy. Although procedures exist for emergency consultations on nuclear weapons use, the existing strategy for employing nuclear weapons does not seem tailored to the consultative process. The military posture of early use is not compatible with NATO's philosophy of caution and prudence in crisis or the early phases of war. The very structure and deployment of forces on a first-use basis could create reciprocal fears of first use and actually short-circuit political control. Restructuring of the military posture in C³I improvements requires order to assure control over the employment of forces, particularly nuclear forces. A no-first-use policy, supported by more sophisticated C³I, is likely to emphasize control over all use of nuclear weapons. Deterrence, moreover, cannot provide total insurance against nuclear war. Nations want the ability to withhold, slow down, or halt military operations and apportion and control the use of weapons to allow time for reflection, communication, and bargaining. C³I must be able to fulfill that requirement. NATO must be able to cope with both long and short wars and with a spectrum of ambiguous and uncertain potential challenges and warnings. C³I must fit that entire spectrum of contingencies. Improved C³I, therefore, must begin at the highest level of policy formation.

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Problems related to C³I have not loomed high in the deliberations and planning of NATO. The issue is receiving increased attention in the alliance, although the "task force six" report of the Long-Term Defense Program (LTDP) for C³ improvement does not seem to have been followed up as intensively as intended.

In fact, apart from the "task force ten" report on INF modernization, the LTDP seems to have been relegated to considerable and unfortunate oblivion. Three major NATO commanders have approved a C³ plan for the alliance that is coordinated *inter alia* with SACEUR's rapid reenforcement plan and plans for implementing the concepts of forward defense and follow-on force commitments. SACEUR is in the process of working out a new integrated air defense plan. Air defense has been the subject of integrated coalition defense

Mr. Holst is former State Secretary of the Royal Norwegian Ministry of Foreign Affairs and former Director of Research, Norwegian Institute of International Affairs. He serves as Scientific Consultant to the Independent Commission on Disarmament and Security Issues.

Johan Jørgen Holst

Director, Norwegian Institute of International Affairs

solutions through NADGE (NATO Air Defense Ground Environment), and more recently NAEW & C, (NATO's Airborne Early Warning and Control) system which is in fact the first fully integrated coalition force.

The establishment of the commonly funded infrastructure program, NICS, NATO's Integrated Communications System, was agreed in 1971. It will be implemented in two stages, the second of which will involve the melding of stand-alone subsystems into an integrated system, but it will not be completed until 1995.

NATO's command and control systems are essentially an overlay on the existing C^3 systems for national forces. The major task at hand is to ensure compatibility and interoperability among the systems. In addition, many improvements are necessary to enhance survivability, including concealment, dispersion, redundancy, hardening, and reduced sizes and signatures of units, to name a few.

The obstacles to information sharing, particularly electronic intelligence information, in a multinational alliance are many, and the systems at large may become saturated and break down from an overload of information. Reliance on sophisticated C^3I systems introduces critical nodes of vulnerability in the defense establishments of the NATO allies, thereby posing vexing problems of system breakdown and weakening capacities for graceful degradation. Flexibility, redundancy, and simplicity would seem to constitute basic requirements, particularly for the smaller allies.

The problems of compatibility are the subjects of continuous consideration and negotiation in the alliance through the STANAG (Standardization Agreements) process. Differences in operational concepts, service traditions, costs, and institutional interests militate against optimum solutions for NATO. The search for workable solutions to the interface between NATO C^3I systems and those of France has produced several examples of the triumph of pragmatic adaptation.

NATO covers a wide and diverse area. It spans substantial differences in military organization and technological sophistication. C^3I solutions cannot be confined to the conditions on the central front. Furthermore, C^3I involves frontier technologies with high spin-off potential, and NATO nations are demonstrably unwilling to concede dominance to single suppliers. Unfortunately, the "two-way street" commitment of the Carter administration does not seem to have been emulated by its successor.

Requirements for C^3I systems are posed by the strategy of the alliance and the structure and disposition of the forces designed to implement that strategy. The systems must also be able to cope with the strategy and forces of would-be adversaries. The survivability of legitimate decision-making authority is a key requirement to any strategy for the alliance. The national authorities must have available reliable, tested, and known procedures for emergency communications and consultation among themselves as well as with the adversary. Procedures exist for consultations concerning the use of nuclear weapons, but existing strategy for possible employment of nuclear

weapons does not appear to be tailored to the consultative process that would precede its implementation.

A military posture that is designed around a presumption of early use of nuclear weapons is not readily compatible with the political emphasis on caution and prudence that is likely to dominate in the decision-making councils of NATO on the threshold of war or during its early and ambiguous phases. Indeed, it is arguable that dependence on early resort to nuclear weapons is likely to accentuate differences in the perceived stakes and reduce cohesion precisely at the point of crisis. Decision-makers may find their options constrained by the actual disposition of forces. NATO's present reliance on a large number of highly vulnerable battlefield nuclear weapons in the forward area can impose the dilemma of using or losing them early in the war. In fact, that very syndrome could exacerbate escalatory pressures through unintended "invitations" of preemption, invitations NATO in turn might feel compelled to preempt. The decision systems might become enveloped by reciprocal fears of first use.

Theater nuclear weapons have in fact been superimposed upon the traditional structure of conventional forces. They would tend to produce pressures for decentralization of command and control as they are distributed to a large number of different military units. The problems of maintaining coordination, central direction, and political control over the employment of theater nuclear weapons in Europe are compounded by

the large number of weapons involved and their intermingling with conventional forces. The existence of dual capable delivery systems exacerbates the problems of discrimination and tends to stimulate pressures for preemption. The short decision times accentuate the destabilizing impact of decisions for dispersal of nuclear weapons from the special munition sites to firing units. Quick-reaction alert procedures which are designed to enhance deterrence could actually draw fire in the context of the nervous tensions of an acute crisis. The governing command structures for theater nuclear forces in Europe are probably quite unstable and prone to accident and breakdown in crisis or war. It is arguable that the doomsday machine which appears to have been installed in Europe contributes to deterrence. However, as societies have become increasingly aware and concerned about the awesome reality of nuclear war, the deterrent posture from the early 1960s has ceased to be reassuring in the 1980s.

The actual structure and deployment of forces may short-circuit the political control of the employment of forces. Improvements in C^3 require, therefore, that attention also be brought to bear on measures to restructure the military posture with a view to preserving actual control over the employment of forces, particularly nuclear forces.

A doctrine of massive employment may be preferable in terms of C^3 requirements, and it may also have some attractive features from the point of view of deterrence. However, the ability to survive enemy attacks will continue to be important in order to protect deterrence against

circumvention through reciprocal fears of first use.

The C^3 system itself must be able to survive and provide an essential communication network for the transmission of emergency action messages. Present NATO strategy contained in MC-14/3, the strategy of flexible response, was promulgated in 1967. It is 16 years old and important changes have taken place in the structure and correlation of forces since that time. If we move back in history 16 years before the formal adoption of MC-14/3, we would be in the year 1951; and if we take into account that the actual process of strategic reassessment leading up to the 1967 decision started several years earlier, we would, for purposes of comparison, have to move back to the immediate aftermath of World War II.

The arrival of strategic parity and the extensive deployment of theater nuclear forces by the Soviet Union have changed the calculus of relative advantage and options. A strategy of early and first use of nuclear weapons threatens to strain the credibility of American extended deterrence in a manner that is likely to cause social opposition and doubts on both sides of the Atlantic Ocean, in addition to leaving Moscow unmoved.

Declaratory enunciations of a no-first-use of nuclear weapons doctrine should follow rather than precede the changes in the military posture which could lend credibility to the declaration. Such changes involve a restructuring and build-down of the theater nuclear posture as well as improvements in the conventional defense capability along the lines of LTDP. Discussion of the option of no first

use serves the purpose of identifying a desirable objective and the associated direction of change. NATO needs to fashion a program for gradual reform of both posture and doctrine.

If NATO should ever find itself at the precipice of war the ability to communicate with the adversary would be of critical importance. The infrastructure for such communication must be created in peacetime, and it must be able to function also in the midst of war enabling the adversaries to negotiate about disengagement and termination of the war. Facilities should exist for the transmission of credible evidence of intentions. Deeds speak louder than words to skeptical listeners. The adversary should be able to ascertain the messages which NATO may want to communicate through its acts of commitment and restraint. The two alliances which confront each other on the continent in Europe may consider the establishment of parallel crisis communication centers to which would be assigned liaison . ns from the other side which would provide an on-call capability to ascertain the absence of feared threats at the invitation of the host alliance in the event of a crisis and the attendant increased danger of war. Such liaison teams could provide the man-in-the-loop element of a C^3I system for inter-alliance crisis management. It would supplement national hotlines and embody the notion that in the nuclear age nations have an overriding shared interest in preventing the outbreak of war in general and escalation to nuclear war in particular. The establishment of parallel crisis communication centers could follow a formal

agreement between the two alliances on the mutual renunciation of force, patterned on the "Eastern agreements" between the Federal Republic of Germany on the one hand and Poland and the Soviet Union on the other. It would provide substance and tangible commitment to the undertaking.

Both alliances could move toward some minimum understanding concerning the codes of conduct, such as the non-targeting of national command centers and no first use of nuclear weapons. Formal treaties are not necessary and could in addition have deleterious effects by implying a *droit de regard* for the adversary to intervene in the defense planning and organization of the opposite alliance. Unilateral declarations which follow changes in the posture, including the institution of robust C^3I systems, could dampen the expectations of nuclear escalation in the East-West relationship as well as within national societies. Deterrence is unlikely to be substantially affected since no side could have high confidence in the ability to stem the process of escalation if war were ever to be unleashed, and since neither side could expect the adversary to refrain from resort to nuclear weapons if pressed against the wall.

A NATO policy of no-first-use of nuclear weapons will require a more sophisticated C^3I system than a simple strategy of massive first use. It is possible to envisage massive second use options, but the philosophy which would underpin any moves away from the "first use if necessary"

to a "second use only" doctrine is likely to lead to increased emphasis on control over any use, on tailoring retaliatory use to the specific challenge at hand. It would impose a kind of *lex talionis* involving an eye for an eye, but no more than an eye for an eye. It is also an option to withhold or reduce retaliation in the event of losing an eye in the hope of protecting many eyes and reversing the process of escalation. Hence, a move toward no first use is likely to pose operational requirements for C^3I which are quite similar to those that flow from strategies for limited and controlled response.

Europeans have tended to object to both the concept of "no first use" and limited options, for fear of degrading deterrence of any war. However, the dialectical ping-pong game of transatlantic discussions about the role of nuclear weapons and the strategy of the alliance indicates that the tensions between requirements for deterrence and reassurance, between the fears of entanglement and disengagement, can only be resolved by the constitution of a robust conventional defense option for the alliance. It does not mean decoupling nor does it imply denuclearization. The nuclear shadow would still be hanging over any conflict in Europe and would deter the contending parties from pressing any advantage to the limit. But the nuclear shadow might cease to saturate the consciousness and conscience of our societies. In the broadest sense, C^3I requirements for the alliance comprise the need for a strategy and a force structure that do not impose large strains on the credibility of the state in the eyes of society.

NATO has negotiated agreements and political guidelines concerning

the use of nuclear weapons beginning with the 1962 Athens guidelines and including the 1969 guidelines concerning consultation procedures, the 1970 guidelines for initial tactical use, the 1970 guidelines for atomic demolition munitions, and the 1972 agreements concerning the role of theater nuclear weapons.

The 1972 agreements are not really guidelines, but rather concepts designed to produce a set of options, which might or might not be used. Nuclear release must be authorized by the American President in consultation with the allies in the North Atlantic Council, according to agreed procedures. Such release procedures apply to all nuclear weapons in Europe under agreements establishing programs of cooperation. SACEUR's nuclear operation plan includes prepared selected employment plans, as well as a general strike plan coordinated with the American single integrated operation plan (SIOP). Battlefield weapons reportedly are not included in the prepared attack options. It is symptomatic of the problems and interests involved that NATO has been unable to agree on guidelines for follow-on use of nuclear weapons.

American nuclear weapons are either single- or dual-key systems, i.e., some require the active consent of the host government for use. The new intermediate range nuclear forces (INF), which may be deployed in Western Europe if the Geneva INF negotiations prove unsuccessful, will be single-key systems. The Federal Republic of Germany, for political reasons, did not want a finger on

nuclear weapons capable of hitting targets in the Soviet Union.

In order to avoid a singular position for the Federal Republic, similar conditions apply in other host countries. It is arguable that single-key arrangements provide a more convincing link in the chain of deterrence linking U.S. strategic forces to the defense of NATO-Europe than dual-key arrangements, as the decision procedures concerning the weapons in Europe would be the same as for U.S. strategic weapons.

In any event, the dual-key discussion in relation to INF illustrates how C^3 arrangements are also determined in relation to broader issues of foreign policy. In the German case, they encompass perspectives on the political order in Europe in general, and international relations in Central Europe in particular.

In the age of nuclear weapons, security policies have evolved around a concept of deterrence. Adversaries are constrained from aggression by the prospect of suffering losses incommensurate with the prospective gains. In addition, nuclear weapons introduce inhibiting uncertainties. Irrespective of the sophistication and versatility of the C^3 systems, the process of possible escalation does not lend itself to high-confidence management. Deterrence is sustained to some degree by the threat which leaves something to chance, by the implicit threat to lose control.

Deterrence cannot provide an ironclad insurance against the outbreak of war. War may result from miscalculation, technical accidents, or escalation

of a local conflict into a broader conflagration. Hence, nations take out insurance against a possible failure of deterrence, and much of the discussion about strategy has centered on the problems of what I would call deterrence plus, that is, on how much and what kind of insurance ought to be taken out against a breakdown of the deterrence system.

In the event of a failure of deterrence, nations would want to possess more options than the conduct of all-out nuclear war. At the minimum, they want to possess the ability to halt action and negotiate deescalation or termination of the war. C^3 provides the essential infrastructure for such options to become real. As the technology became available, options for selective and controlled employment of nuclear weapons found their way into war plans. Here problems arise because the dividing line between insurance against a breakdown of deterrence and the development of strategies for fighting limited nuclear war as a matter of national policy is not a clear-cut division.

The slope is slippery and the perception of motives and capacities is uncertain. President Reagan is surely right in insisting that a nuclear war cannot be won and must never be fought. The actual posture should be designed to underline this insight. A minimum requirement is the ability to withhold action to provide time for reflection and communication with the adversary. Hence, we are back to the political need for survivable forces and reliable and redundant C^3 systems. It should be recalled that the

process of political reflection and decision requires more time than the mere transmission of information.

Preoccupation with the issues beyond deterrence requires sensitive political management in a multinational alliance where the responsibilities and roles are not and cannot be equally distributed. Defense planning is a professional and necessary endeavor and it should not be kept outside the realm of public scrutiny. However, it should not be confused with the management of peaceful international relations. In recent years, we have witnessed how relations in the alliance have become strained because of a propensity to discuss relationships with a potential adversary in terms of war-fighting scenarios.

The prospect of war, particularly nuclear war, has been moved to the front of public perception largely because of a governmental preoccupation with its potential conduct. Coupled with bellicose rhetoric concerning the nature and objectives of the adversary, such preoccupation has caused a basic estrangement between society and state, including state institutions like the alliance. Defense policy has appeared to dominate foreign policy. Teddy Roosevelt offered the prudent advice of speaking softly while carrying a big stick. Recent practice seems to have followed a somewhat different path — talking harshly and complaining about the inadequate size of the stick.

Hubris should not be allowed to replace humility in the approach of governments to the enormous uncertainties and awesome consequences of nuclear war. C^3 systems can never

introduce reliable prediction and calculation. They cannot enable man to play God. Their function is nevertheless essential in the attempt of governments to build barriers against the unleashing of the Promethean power which they have assembled. Nuclear weapons do not lend themselves to disinvention, and states have to fashion security arrangements in cognizance of these weapons' continued existence and potential reintroduction following possible agreements on arms control and disarmament. More effort may be devoted to designing C³I systems that will permit governments to rely on fewer and more controllable weapons, on withholdable responses, and on communication with the adversary during crisis and war in order to contain the pressures for escalation of the conflict.

Peacekeeping and potential peace restoration through nuclear deterrence create tensions and fears that are likely to erode the reassuring functions of alliance. Hence, a gradual transformation of defense arrangements in the direction of reduced reliance on the nuclear threat would constitute a necessary condition for the restoration of public confidence in the capacity of the alliance to extend security to the North Atlantic region.

The management of coalition defense requires a balanced and comprehensive approach to strategy and the development of force postures. It is possible to identify another C³I in this connection, Continuity, Coherence, and Consistency in Implementation. Unfortunately, careful design

has an uncomfortable habit of coming apart in the process of implementation. NATO's "dual-track" decision concerning intermediate range nuclear forces is a case in point. It was designed to prevent the Soviet Union from undermining the political order in Europe in an era of codified strategic parity between the two superpowers. The SS-20 missile had to be drawn down and brought into the negotiated framework for the East-West military balance. It should protect the strategic interests of the non-nuclear weapon states of Europe, and not the mutual rights of Americans and Russians in Europe. It was part of the Long Term Defense Program — the High Level Group was in fact "task force ten" — and that program was essentially a program for strengthening NATO's conventional defense posture. It was designed as a twin-track decision wherein the track of negotiation was assigned equal weight with the track of deployment.

In the process of implementation the basic architecture was changed. In 1979 it was known that the Pershing IIs and ground-launched cruise missiles would not be available for initial deployment until the end of 1983. No dates were fixed for deployment or negotiation in December 1979; however, governments at the time told their skeptical publics that there would be four years of negotiation before deployment would start. In light of the experience from negotiating the SALT-I and SALT-II treaties, the four years did not seem excessive. As the end of 1983 is approaching, the negotiating track has been active for only two years while preparations for deployment have been proceeding without interruption. (The Russians held back and caused

an initial delay of 10 months and the Reagan administration caused another 10 months of delay after assuming office.) In the meantime public support for the "dual-track" decision has eroded.

American failure to ratify SALT-II changed another aspect of the original architecture. The NATO communique from December 12, 1979, which contains the "dual-track" decision, includes an endorsement of the SALT-II Treaty, and envisaged INF negotiations within the context of SALT-III. By setting up separate INF negotiations and insisting on equal force levels for the Americans and the Russians, NATO has in fact contributed towards the identification of a separate Euro-strategic balance with the very decoupling connotations which the "dual-track" decision was carefully designed to prevent. The chosen framework made it inevitable, furthermore, that Moscow would play the political card of bringing British and French forces into the construction of the "Euro-strategic balance," thereby exacerbating the problems of political balance from the point of view of the non-nuclear weapon states in Western Europe, and suggesting a Soviet droit de regard with respect to the future of the British and French deterrents with American consent. Washington has refused to accept the suggested connection but remains adamant in its insistence on Soviet-American equality. It is certainly arguable that a solution which involves a build-down of the SS-20 force to some 150 warheads on some 50 missiles within the range of targets

in Western Europe coupled with a freeze on deployments east of the 80°eastern parallel would be consistent with the original NATO objective of producing a "draw-down" of the SS-20 and its "draw-in" into a framework of negotiated regulation. Such a solution could provide an opportunity, moreover, for recoupling by a declared American commitment to counter the residual SS-20 missiles by U.S. strategic forces, possibly through an increased assignment of SIOP forces to SACEUR.

Finally, the LTDP appears to have been moved to NATO's back burners with the result of moving nuclear modernization saliently up front Coalition defense requires consistent and continuous management. More attention needs to be devoted to aligning the tasks of planning and implementing coalition defense with the democratic processes of elections and the formation of successor governments in the member countries of the Western alliance.

Modern technology has a role to play in a program for reducing NATO's reliance on nuclear weapons, and sophisticated C^{3}I systems are needed to exploit the potential of technologies for destroying an enemy's assault formations and airfields. However, great care must be taken in designing the conventional posture to avoid such forces as would impose upon decision-makers the same incentives and constraints and the nuclear weapons they would replace and complement.

The velocity of military operations has increased in quantum jumps during the 20th Century. The velocity of decision-making cannot keep pace with the rapid and extensive escalation that would result from the use of
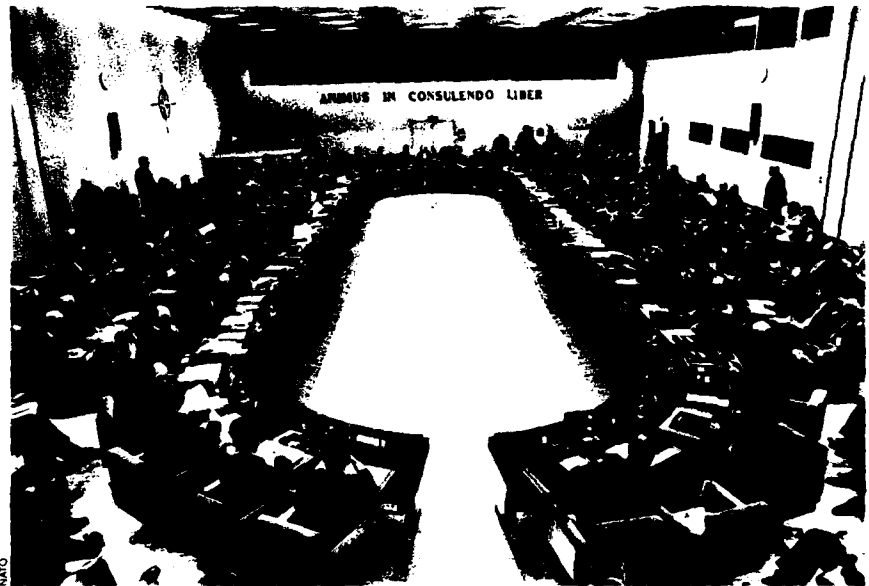
"We have to be careful that we don't reach out to incorporate our rapidly expanding technology in national weapons systems without fully understanding the impact it has on the NATO alliance and its capability to win wars."
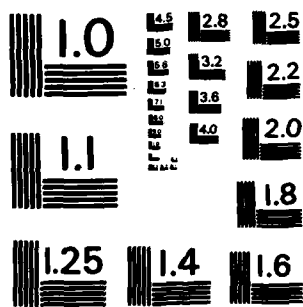
MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS-1963-A

nuclear weapons and some of the emerging conventional technologies. A major purpose of military planning should be to slow and space military operations to create time for reflection and bargaining.

High reliance on a dense delivery of advanced conventional munitions in large quantities could so affect the tempo of war and the scale of destruction as to reduce the chances of stopping the violence and preventing explosive escalation across the nuclear threshold. Some high-technology approaches to conventional defense could lead to an acceleration of the tempo and an intensification of the scale of operations that could impose the same strain on decision-making systems and the momentum of war as would nuclear weapons, and thereby reduce the prospects of controlling the process of escalation. The nuclear threshold may be blurred from the conventional as well as the nuclear end of the spectrum of violence in war.

C^3I systems should be designed with the aim of slowing down military operations and apportioning the commitment of weapons. Strategy and force postures must be related to possible conflict scenarios. NATO must be able to cope with prolonged conflicts as well as short wars, although the prospect of a long war in Europe does not seem likely in a nuclear context. However, insufficient capacities for sustained defense can harbor weaknesses which may be exploited for purposes of exerting pressure in peacetime or during crisis.

For political reasons, NATO must rely on forward defense on the central front where it cannot afford to trade space for time. This political constraint has implications for the design of C^3I systems as well. NATO is a defense alliance and, although an aggressor cannot expect to be given sanctuary status outside a NATO defense area, NATO cannot develop a strategy with a marked offensive emphasis. Social consensus would weaken rapidly in Western Europe in the event of such a choice. Furthermore, NATO must fashion strategies and defense postures that are compatible with the development of greater pluralism in Eastern Europe. Western strategy should not drive them back into a Soviet strategic embrace. The air-land battle concept needs to be considered in this broader context of peacetime political relations in Central Europe.

War in Europe may result not only from a deliberate drive to establish mastery through military occupation, it could also result from spillover from "police actions" in Eastern Europe, or from probing actions on the peripheries of the alliance. The alliance must be able to deal with a spectrum of potential challenges, many of which will be ambiguous and uncertain. NATO needs the capacity to respond repeatedly to ambiguous warning. A high reliance on nuclear responses would seem to harbor rigidity rather than flexibility in response. C^3I systems must be chosen with reference to a spectrum of possible contingencies and not tailored solely to one design contingency.

NATO is a multinational alliance of sovereign states. Power and influence, however, are not evenly distributed within the alliance. The United States carries the major responsibilities and controls the most forces.

American plans and decisions tend to drive the defense posture of the alliance. In the nuclear sphere, allies may share in the design of guidelines, but the actual plans and policy options are made in the United States. Brussels is far away from Washington.

The Nuclear Planning Group and the Defense Planning Committee provide an institutional framework for joint deliberations. However, actual decisions emerge elsewhere. The Military Committee plays a rather emasculated role compared to the old Standing Group in Washington. The institutional efficiency of NATO has not been the subject of the studies it deserves. It is possible that a NATO strategic planning group should be established in Washington to facilitate closer coordination and interaction with the American defense planning process. The problem of C^3I improvement has to be approached also at the level of high policy formation.

Allied Purposes and Command and Control

In times of crisis, it can never be government policy to let crisis turn into nuclear war. The crisis value of any new system should be a first priority. C³'s central task will be to enable government to intensify communications, both public and private, within itself, with other friendly nations, and with the adversary. The critical channel of communications will be between the two major adversaries, who must be able to exchange as many intended signals and as few unintended signals as possible. Everything done by diplomats, public speakers, crowds, and military commanders will be taken as a signal by the adversaries. Signals arising from military movement may conflict, in Moscow's interpretation of them, with signals from the President. It will be the President's responsibility to resolve those conflicts in a timely, effective fashion. In the event of a nuclear outbreak, the first requirement will be not to decapitate the enemy leadership, so that the lines of communication remain open. Destroying this ability to communicate would reduce by orders of magnitude the prospect of ending the war before the remaining arsenals were expended. The survival of C³I is at least in part the option of our adversary,

as it is our option vis-a-vis Moscow. Weapons, deployment, and C³I systems that do not meet the test of operability in a crisis situation should not be procured simply for the sake of a perceived present or future balance of power. In this light, there are very grave questions to ask concerning the MX and Pershing II.

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In a crisis situation, where the objective of the alliance is to keep the crisis from turning into war, the task of C³ will be to keep clear the channels of communication between government leaders. It can never be the object policy to let crisis turn into a nuclear war or even into the kind of large-scale conventional contest in Europe that carries with it the risk that it will turn nuclear. Assuming that kind of crisis, let us consider the problems created for command, control, and communication.

The central proposition about behavior in such crisis is that the leaders of governments will be intensely concerned with communication of many kinds: communication within government, among governments, and with the adversary. Each is likely to be partly public, partly private.
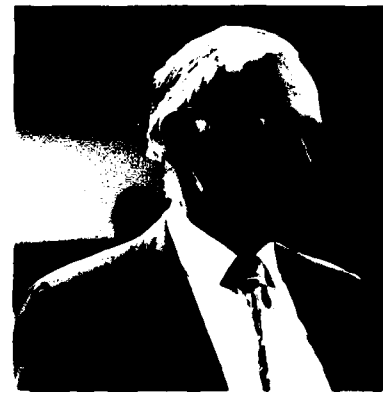
Mr. Bundy has served as Special Assistant to the President for National Security and as President of the Ford Foundation.

McGeorge Bundy

Professor of History, New York University

Nikita Khrushchev at a 1960 press conference dealing with charges of an American violation of the Soviet border. The first requirement, according to Bundy, is not to decapitate; if you destroy the enemy leadership you destroy your means of ending the war before the arsenals are spent.

I submit that the most important channel of communication is with the adversary. What will determine whether the crisis is resolved without war is the ability of the two adversaries to communicate. The primary concern for each government in that situation will be its ability to send to its adversary as many intended signals as possible and, conversely, as few unintended signals as possible. Furthermore, everything that is done by diplomats, by public speakers in and out of government, by crowds, and by military commanders in that crisis will be a signal and thus a part of the communication between the two adversaries.

One of the most important signals during the Cuban missile crisis came from journalist Walter Lippmann, who was not under the control of the United States government, when he suggested balancing the missiles in Cuba against the missiles in Turkey. That suggestion, whether because it appeared in his column or not, played a leading part in the denouement of the crisis.

More important and sometimes less noticed, I fear, are the signals issuing from military movement and behavior. If there are military crisis requirements (actions taken to prepare for a worsening situation); if there are movements to defend against being caught at a very dangerous, possibly conclusive disadvantage; if there are steps to be taken in the surveillance of others — and there were such activities in the Cuban missile crisis — it is possible that the signals Moscow receives will conflict with the signals the President wishes to send.

At the very least, those conflicting pressures must be resolved. The person to resolve them is the man most

centrally responsible for the conduct of our side of the crisis, the President. That role will call for a warning message regarding apparent conflicts between military requirements and diplomatic communications. Such clarification will not occur automatically. For example, a conflict arose in the management of the quarantine of Cuba between sound naval practice and the political purpose as understood by the Commander-in-Chief. The conflict arose over White House concern for bargaining time.

Now there is a powerful difference between the rapidity with which information circulates and the rapidity with which people change their minds. Governments whose prestige is at stake often change their minds much more slowly than the situation before them changes. It is not just bargaining time, but time for psychological adjustment to the next move that is important. Yet intense pressure can produce quick replies. This is one of the lessons learned from Robert Kennedy's final conversation with Nikita Khrushchev and Khrushchev's open message less than 12 hours later.

Applying these considerations to the terrible case of nuclear war, the first requirement is not to decapitate. You have to have a way of ending the war. If you destroy the enemy leadership, you make that problem almost unmanageable. You reduce by orders of magnitude the prospect of ending the war before the remaining arsenals are expended. I believe that when people talk about targeting the political and military control system of the

Soviet government, they are talking about moves that may be useful in winning table games of nuclear war, but that are far from constructive in the context of avoiding or ending one, if it should ever come, before the destruction of our society.

About the need for proportionality in second use of nuclear weapons, I believe you approach the problem sensibly by a less-than-equal reply. Attempting by a less-than-equal reply to send a war-ending signal at the same time as one sends a signal of determination would not be interpreted as an act of appeasement. One of the extraordinary facts about nuclear weapons is that in terms of pleasure and pain, in terms of gain and loss for a government, what happens to you and your friends (let us say a loss at the level of 10), is vastly more painful than any pleasure you get from having inflicted pain on your adversary (let us say a loss at the level of 20). In terms of both punishment and psychological equality, therefore, a lesser response is adequate and can send the signal that the proper objective for both sides in the use of nuclear weapons is still zero.

Likewise, the reasons for not decapitating the enemy apply, perhaps with greater force, to ourselves. Maintaining the survivability of a national command authority is difficult because of countermeasures, complexity, cost, and unpredictability. Another difficulty in the U. S. is that of putting the President in a place other than his standard place of duty. For all these reasons the avoidance of decapitation is more than a technical problem. It is also a policy problem.

The survival of C^3I, at least the survival of command and control, is in part at all times the option of our adversary, as it is indeed our option vis-a-vis Moscow. If there can be a wider understanding that these two great governments cannot aim at each other's destruction except at the most mortal danger to themselves, we will all think more sanely about the role of nuclear war in our affairs.

Finally, I would say of weapons, deployments, and C^3I systems, that unless they meet the test of operability in crisis conditions, they should not be procured simply for some hypothetical value either in perceived present-day balances of power or in actual war-fighting. I believe that under this rubric one is forced to ask questions about the MX and the Pershing II, and to think hard about particular kinds of conventional weapons. It is easy to beguile oneself with the drawing board capabilities of our own side and to commit the fallacy of the last move by avoiding an appropriate consideration of what these weapons will look like when — I think it is nearly always when, and not if—both sides have them.

The uncertainty threat, what I sometimes call the certainty of uncertainty, is part of the overall deterrence for both sides. But we cannot play games with the way we will conduct ourselves in times of crisis, because such times, unlike nuclear war itself, are quite certain to occur.

Closing Remarks

A s we have seen from the discussions of the past two days, geopolitical considerations focus on three areas for coalition defense:

Western Europe, with whom we share many values and which in total has more people and a bigger GNP than the U.S.

The *Far East* (Japan, the Philippines and South Korea, with loose U.S. ties to China and Southeast Asia), which is growing economically at a rate greater than any other area in the world — its trade with the U.S. is the largest of any area

Southwest Asia (the Middle East and Pakistan), an area important to the U.S. because of Israel and OPEC oil for West Europe and Japan

Our alliances have the purpose of worldwide deterrence and the ability to retaliate effectively if attacked. Western Europe is the only true coalition alliance through the NATO treaty. In the Far East we have essentially bilateral arrangements. In Southwest Asia we have no base arrangements or treaties for joint defense; we provide defense aid and the ability to move in if needed.

We cannot expect to achieve worldwide deterrence without coalition defense and the sharing of costs and burdens where this is possible. These coalition arrangements must be supplemented with maritime capabilities to employ rapid deployment and expeditionary forces *anywhere in the world* as well as to protect sea lines of communications.

C^3I provides the means by which coalition capabilities are achieved operationally. Coordination of plans and the mixing of forces requires *interoperable and integrated* C^3I. *Compatibility of forces* provides the ability to exist and to function without mutual interference and at long range from home bases.

To achieve coalition defense, two elements are needed:

- Coalition force-acquisition and employment strategy

- Coalition command and control of forces during employment

First, without a treaty such as NATO's, it is difficult to implement a coalition strategy because of sovereignty issues, and because of legal and bilateral problems such as those we face with Japan and South Korea and in the Middle East. Treaty arrangements are preferred for coalition defense because they facilitate joint arrangements.

Mr. Zraket served earlier as Senior Vice President of Technical Operations and Senior Vice President of MITRE's Washington Operations. He serves on numerous science- and defense-related boards, committees, and advisory groups. He is widely published in the fields of C^3I, energy, environmental control, and air and ground transportation.

Charles A. Zraket

Executive Vice President and Chief Operating Officer, The MITRE Corporation

Second, we must have real-time coalition intelligence-collection and processing to reduce U.S. dominance in this process.

Third, we must strike a balance between the benefits of technology transfer to our allies and leakage of secrets to our adversaries.

Fourth, we must share burdens with respect to jobs and co-production of equipment and weapons; we can withhold sensitive co-production where necessary.

With respect to coalition command and control of forces we need:

- Joint exercises, training, and manning such as those in the NATO AWACS program

- Doctrine and concepts of operation for both parallel employment of each nation's forces and mixed employment of these forces

- Integrated intelligence operations

- Interoperable, secure identification systems

- Secure and anti-jam communications that are compatible

- A common language for communications and documentation

Interoperable C^3I is central to the feasibility of the above needs.

One of the major dangers in achieving coalition defense is the time and cost it may take to develop, deploy, and employ interoperable C^3I systems and compatible forces because of institutional bottlenecks in reaching international agreements. The record is mixed here. In some cases programs have been delayed or forces are incompatible; in others, such as SACEUR control of NATO forces and the NATO AWACS and F-16 acquisitions, coalition acquisition and employment have been successful and have saved time and money. What is needed in this area is continued encouragement and policy support by the U.S. for a coalition strategy and the sharing of costs and burdens and C^3I.

Finally, I would like to close by thanking all the participants and speakers. Also, I would like to thank publicly Col. Tom Cardoza of ESD and Lew Billig of MITRE for organizing and managing the Symposium. I would like also to thank Bob Komer whose efforts at last year's symposium led us to recognize the importance of coalition defense and C^3I and to structure this year's meeting. Yet the subject requires more work and discussion than we have been able to give it here if we are to achieve effective coalition defense around the world.

Acronyms

ADSIA Allied Data Systems Interoperability Agency

AEW Airborne Early Warning

AFSATCOM Air Force Satellite Communications Program

ASEAN Association of Southeast Asia Nations

ASW Antisubmarine Warfare

AWACS Airborne Warning and Control System

BADGE Base Air Defense Ground Environment

BMEWS Ballistic Missile Early Warning System

C² Command and Control

C²I Command, Control, and Intelligence

C³ Command, Control, and Communications

C³I Command, Control, Communications, and Intelligence

CENTO Central Treaty Organization

CINC Commander-in-Chief

CINCPAC Commander-in-Chief, Pacific

DEW Line Distant Early Warning Line

DOD Department of Defense

DMZ Demilitarized Zone

DSARC Defense Systems Acquisition Review Council, Office of the Secretary of Defense

ECM Electronic Countermeasures

ECCM Electronic Counter-Countermeasures

ESD Electronic Systems Division, Air Force Systems Command

FRG Federal Republic of Germany

ICBM Intercontinental Ballistic Missile

IFF Identification, Friend or Foe

INF Intermediate Range Nuclear Force

JSTARS Joint Surveillance Target Acquisition Radar System

JTIDS Joint Tactical Information Distribution System

LTDP Long-Term Defense Program

NADGE NATO Air Defense Ground Environment

NAEW NATO Airborne Early Warning System

NAEW&C NATO Airborne Early Warning and Control

NAPMA NATO Early Warning and Control Program Management Agency

NATO North Atlantic Treaty Organization

NAVSTAR Navigation System using Time and Ranging

NICS NATO Integrated Communications System

OPEC Organization of Petroleum Exporting Countries

PACAF Pacific Air Forces

PACOM U.S. Pacific Command (U.S. Unified Command, Pacific)

R&D Research and Development

RDJTF Rapid Deployment Joint Task Force

RDT&E Research, Development, Test, and Evaluation

RF Radio Frequency

RITA French, Belgian Automatic Analog/Digital Switching Network

ROK Republic of Korea

SAC Strategic Air Command, USAF

SACEUR Supreme Allied Command/Europe (NATO)

SALT Strategic Arms Limitation Talk or Treaty

SHAPE Supreme Headquarters, Allied Powers, Europe

SINTAC System Integre De Navigation Telecommunication Et D'Anti Collision (French Air Force Secure Data System)

STANAG Standardization Agreement

STRIDA System Transmission Representation Defense Aerienne (French Air Defense Radar Net)

TACAIR Tactical Air Support

TACAMO Take Charge and Move Out, Navy Communications Aircraft

VHSIC Very High Speed Integrated Circuitry

VLF Very Low Frequency

VLSI Very Large Scale Integrated Circuitry

WWMCCS Worldwide Military Command and Control System

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